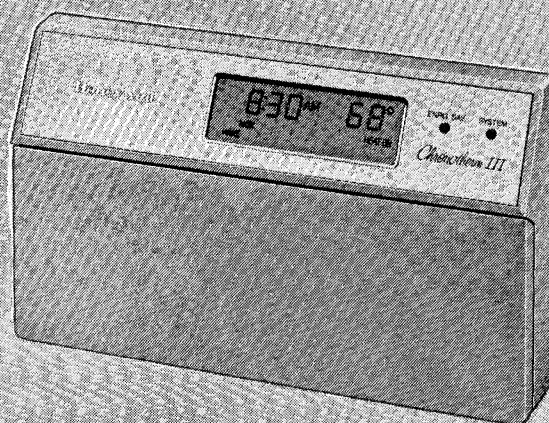


# Honeywell

THE T8600, T8601, T8602, T8603 CHRONOTHERM III PROGRAMMABLE FUEL SAVER THERMOSTATS PROVIDE AUTOMATIC CONTROL OF SINGLE STAGE HEATING OR HEATING/COOLING SYSTEMS AND OFFER USERS THE HIGHEST STANDARD OF COMFORT AND CONVENIENCE AVAILABLE WITH ENERGY SAVINGS.

- ☐ T8600 thermostats are powered through the heating/cooling system controls; ideal for replacement application.
- ☐ T8601 thermostats are powered direct from transformer, requiring two wires to system transformer; ideal for new construction installation.
- ☐ T8602 thermostats are powered by three AA alkaline batteries; suitable for 100 percent control compatibility.
- ☐ T8603 thermostats are powered direct from transformer, and include additional terminals for one, two or three transformer systems.
- ☐ Thermostats include a wiring wallplate.
- ☐ Digital clock (liquid crystal display) indicates continuous time, day, current period, and room temperature. Upon inquiry, provides program times and program set points.
- ☐ All thermostats provide 4 different temperature settings per daily schedule to optimize user comfort and energy savings.
- ☐ Different daily schedules may be selected for weekdays, Saturday and Sunday.
- ☐ ENRG. SAV. and SYSTEM light-emitting diodes (LEDs) included on T8600, T8601, T8603 models.
- ☐ Models available with automatic heat/cool changeover.
- ☐ Batteries packed with devices provide power to maintain clock and memory during power failures in T8600, T8601, T8603 and supply power for operation in T8602.
- ☐ Thermostat can be programmed in hand or after mounted on wall (batteries must be installed).
- ☐ Temporary program override available by using—
  - WARMER and COOLER keys.
  - SKIP next program key.
  - CHANGE to last program key.
- ☐ HOLD TEMP key provided for indefinite program override (vacation/holiday).
- ☐ Adaptive Intelligent Recovery™ function brings room temperature to programmed temperature at programmed time, maximizing comfort and energy savings.
- ☐ Adaptive Intelligent Recovery™/conventional recovery selection screw included on back of thermostat.
- ☐ Fan operation switch included on back of SUPER TRADE-LINE models to select either independent or direct thermostat control of fan in heating.

## CHRONOTHERM III FUEL SAVER THERMOSTATS



**T8600A-D**  
**T8601A-D**  
**T8602A-C**  
**T8603A-C**

# SPECIFICATIONS

## IMPORTANT

THE SPECIFICATIONS GIVEN IN THIS PUBLICATION DO NOT INCLUDE NORMAL MANUFACTURING TOLERANCES. THEREFORE, THIS UNIT MAY NOT MATCH THE LISTED SPECIFICATIONS EXACTLY. ALSO, THIS PRODUCT IS TESTED UNDER CLOSELY CONTROLLED CONDITIONS, AND SOME MINOR DIFFERENCES IN PERFORMANCE CAN BE EXPECTED IF THOSE CONDITIONS ARE CHANGED.

## SUPER TRADELINE MODELS

SUPER TRADELINE controls offer features not available on TRADELINE models, and are designed to replace a wide range of Honeywell and competitive controls.

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling, and maximum replacement value. Specifications of SUPER TRADELINE and TRADELINE controls are the same except as noted below.

TABLE I—SUPER TRADELINE MODELS.

THERMOSTAT MODEL NUMBER	STAGES		SWITCHING		APPLICATION	POWER METHOD
	HEAT	COOL	SYSTEM	FAN		
T8600C <sup>a,b</sup>	1	1	HEAT-OFF-COOL	ON-AUTO	Gas, oil or electric 24 V systems with option of independent or thermostat-controlled fan in heat.	Powered through the heating or cooling system controls; backup batteries included.
T8602C <sup>c</sup>	1	1	HEAT-OFF-COOL	ON-AUTO		Powered by three AA alkaline batteries.
T8603C	1	1	HEAT-OFF-COOL	ON-AUTO		Powered direct from transformer; includes additional terminals for one, two or three transformer systems; backup batteries included.

<sup>a</sup>Typical single-stage heat pump (with external fan control) applications; jumper W and Y.

<sup>b</sup>Includes 250 ohm, 10 W resistor for low current draw (below 0.08 A) system compatibility.

<sup>c</sup>Typical older and commercial electric heat, and water coil applications.

## SUPER TRADELINE FEATURE:

Fan operation switch on back of thermostat to select either independent or direct thermostat control of fan in heating.

# ORDERING INFORMATION

WHEN PURCHASING REPLACEMENT AND MODERNIZATION PRODUCTS FROM YOUR TRADELINE WHOLESALE OR YOUR DISTRIBUTOR, REFER TO THE TRADELINE CATALOG OR PRICE SHEETS FOR COMPLETE ORDERING NUMBER, OR SPECIFY—

1. Model number; SUPER TRADELINE, if desired.
2. Number of heat and cool stages desired.
3. System, fan switching desired.
4. Application.

IF YOU HAVE ADDITIONAL QUESTIONS, NEED FURTHER INFORMATION, OR WOULD LIKE TO COMMENT ON OUR PRODUCTS OR SERVICES, PLEASE WRITE OR PHONE:

1. YOUR LOCAL HONEYWELL RESIDENTIAL SALES OFFICE (CHECK WHITE PAGES OF YOUR PHONE DIRECTORY).
2. RESIDENTIAL DIVISION CUSTOMER SERVICE  
HONEYWELL INC., 1885 DOUGLAS DRIVE NORTH  
MINNEAPOLIS, MINNESOTA 55422-4386 (612) 542-7500

IN CANADA—HONEYWELL LIMITED/HONEYWELL LIMITEE, 740 ELLESMERE ROAD, SCARBOROUGH, ONTARIO M1P 2V9. INTERNATIONAL SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES OF THE WORLD.

## TRADELINE MODELS

TRADELINE models are selected and packaged to provide ease of stocking, ease of handling and maximum replacement value.

TABLE II—TRADELINE MODELS.

THERMOSTAT MODEL NUMBER	STAGES		SWITCHING		APPLICATION	POWER METHOD
	HEAT	COOL	SYSTEM	FAN		
T8600A	1	—	—	—	Gas, oil or electric 24 V systems with independently controlled fan in heat.	Powered through heating or cooling system controls; backup batteries included.
T8600B <sup>a</sup>	1	—	HEAT-OFF	—		
T8600B <sup>b</sup>	1	—	—	ON-AUTO		
T8600C <sup>c</sup>	1	1	HEAT-OFF-COOL	ON-AUTO		
T8600C <sup>c,d</sup>	1	1	HEAT-OFF-COOL	ON-AUTO	24 V systems with thermostat-controlled fan on heat and cool.	
T8600D <sup>e</sup>	1	1	HEAT-OFF-COOL-AUTO	ON-AUTO	Gas, oil or electric 24V systems with independently controlled fan in heat.	
T8601A	1	—	—	—	Gas, oil or electric 24 V systems with independently controlled fan in heat; ideal for new construction installation.	Powered direct from transformer, requires two wires to system transformer; backup batteries included.
T8601B	1	—	—	ON-AUTO		
T8601C <sup>c</sup>	1	1	HEAT-OFF-COOL	ON-AUTO		
T8601D <sup>e</sup>	1	1	HEAT-OFF-COOL-AUTO	ON-AUTO		
T8602A	1	—	—	—	Gas, oil or electric 24 V systems with independently controlled fan in heat.	Powered by three AA alkaline batteries (included).
T8602B <sup>b</sup>	1	—	—	ON-AUTO		
T8602C	1	1	HEAT-OFF-COOL	ON-AUTO		
T8603A	1	—	—	—	Gas, oil or electric 24 V systems with independently controlled fan in heat.	Powered from a separate transformer, requiring extra wire(s) to thermostat; backup batteries included.
T8603B	1	—	—	ON-AUTO		

<sup>a</sup>With positive OFF.

<sup>b</sup>Heat only with fan control.

<sup>c</sup>Typical single-stage heat pump (with external fan control) applications; jumper W and Y.

<sup>d</sup>Typical older and commercial electric heat, and water coil applications.

<sup>e</sup>In freezing climates, be sure the cooling compressor has adequate cold start protection.

**LIGHT-EMITTING DIODES (LEDs):** Two included on T8600, T8601, T8603 models. SYSTEM LED lights up during thermostat ON cycle, and ENRG. SAV. LED lights up during the LEAVE and SLEEP time periods.

**VOLTAGE RATING:** 15 to 30 Vac.

**CURRENT RATING:**

For T8600: 0.08 A minimum to 1.2 A maximum. Current draw must be 0.08 A to 1.2 A in the W or Y circuit when the fan switch is in the ON position, or 0.08 A to 1.2 A total in the Y plus G circuits when the fan switch is in the AUTO position.

For T8601, T8602, T8603: 1.6 A maximum.

**OPERATING HUMIDITY RANGE:** 5 to 90 percent relative humidity.

**OPERATIVE AMBIENT TEMPERATURE RANGE:** 40° F to 110° F [4° C to 43° C].

**SET POINT RANGE:** 45° F to 88° F [7° C to 31° C].

**CALIBRATION:** Self-calibrating thermostat and thermometer to ± 1° F.

**SHIPPING TEMPERATURE:** minus 20° F to plus 120° F [minus 29° C to plus 49° C].

**CYCLES PER HOUR ADJUSTMENT:**

Heating—factory-set at 6 cph (adjustable to 1, 3, or 9 cph for special systems).

Cooling—factory-set at 3 cph (not field adjustable).

**FINISH:** Beige matte over decorative brushed metal faceplate.

**DIMENSIONS:** Thermostat (mounted on wallplate)—7 in. [178 mm] long, 4-1/16 in. [103 mm] high, 1-3/4 in. [44 mm] deep. See Fig. 1 for wallplate dimensions.

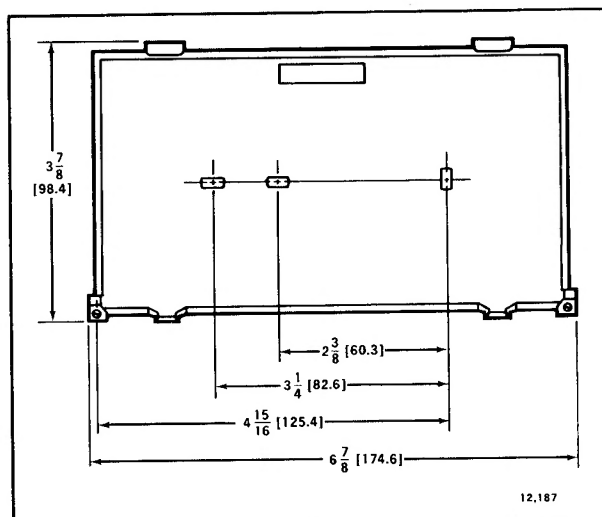


FIG. 1—T8600, T8601, T8602, T8603 WALLPLATE MOUNTING DIMENSIONS IN in. [mm IN BRACKETS].

#### ACCESSORIES:

193121A Cover Plate Assembly includes cover plate, adapter ring and screws. Covers marks left by old thermostat. Allows mounting on vertical or horizontal outlet box. 6-9/10 in. x 4-3/4 in. [175 mm x 121 mm].

TG586A Locking Cover.  
202384B Resistor for T8600.

#### REPLACEMENT PART:

220529A Replacement Door Assembly.

## INSTALLATION

### COMPATIBILITY

The T8600 Thermostats will replace most heating or heating/cooling system thermostats, and are designed to be part of a Honeywell control system. They can be used with other control systems, but an isolating relay may be needed in the thermostat control circuit. See Table III.

#### IMPORTANT

If your system needs an isolating relay and one is not installed, no hazard will exist, but the system will not operate. The thermostat will not be damaged unless you connect it directly to 120 Vac.

If the current draw of the primary control is below 0.08A, a 202394B Resistor should be installed on the furnace terminal strip to increase the current draw of the primary control to 0.08A or greater. This would alleviate any compatibility problem between the T8600 Thermostat and the system due to a low current draw. For installation details, refer to instructions packed with the resistor.

The T8601, T8602 and T8603 Thermostats are compatible with other control systems without the need for an isolating relay.

### WHEN INSTALLING THIS PRODUCT...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. Allow thermostat to warm to room temperature before programming.
5. After installation is complete, check out product operation as provided in these instructions.

## CAUTION

Disconnect power supply to prevent electrical shock or equipment damage.

### LOCATION

Install thermostat and wallplate about 5 ft. [1.5 m] above the floor in an area with good air circulation at room temperature.

Do not install the thermostat where it may be affected by—

- drafts or dead spots behind doors, in corners or under cabinets.
- hot or cold air from ducts.
- radiant heat from sun or appliances.
- concealed pipes and chimneys.
- unheated (uncooled) areas behind the thermostat, such as an outside wall.

### If Replacing An Existing Thermostat

Turn thermostat power off at furnace or boiler. A mul-

tiplex transformer system may require turning off multiple switches or disconnects. Remove any existing wallplate or subbase from wall. Label each wire with, or write down, the letter or number on the wiring terminal as the wire is removed, to avoid miswiring later.

### If New Installation

Run cable to a hole at the selected wall location, and pull about 3 in. [76 mm] of wire through the opening. Color-coded 18 gauge thermostat cable with at least one conductor for each wiring terminal is recommended. Good service practice recommends selection of cable with one or two more conductors than the immediate application requires.

### MOUNTING WALLPLATE

Remove thermostat from wallplate (Fig. 2).

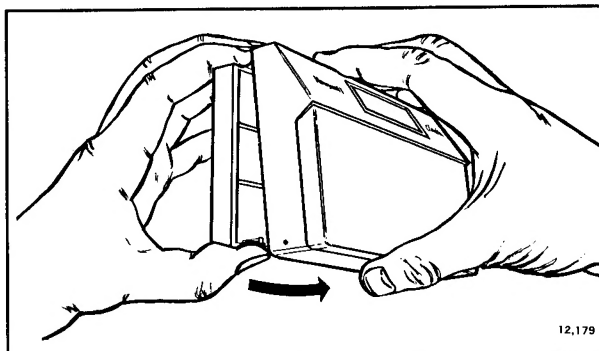


FIG. 2—REMOVING THERMOSTAT FROM WALL-PLATE.

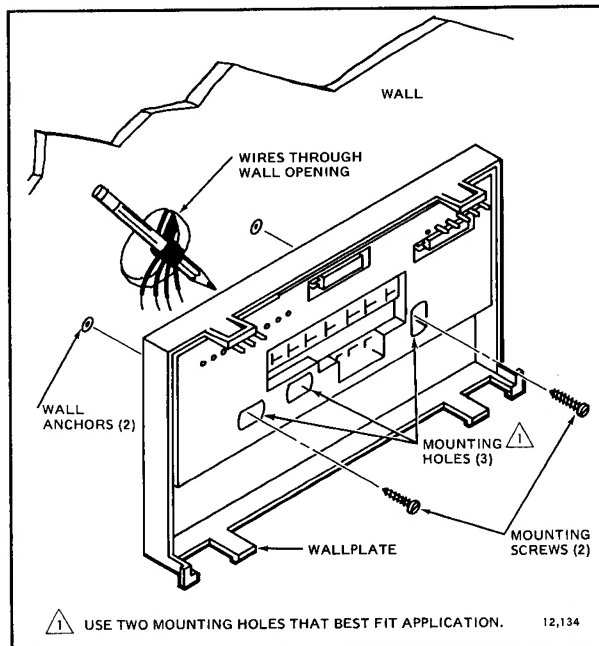


FIG. 3—MOUNTING WALLPLATE ON WALL.

**TABLE III—T8600 THERMOSTAT AND SYSTEM COMPATIBILITY**  
(not applicable to T8601, T8602, T8603)

Manufacturer	Model No.	Compatible	Solution	Manufacturer	Model No.	Compatible	Solution
<b>ELECTRIC HEAT RELAYS</b>				<b>Standing Pilot</b>			
Honeywell	R841C	yes		Honeywell (all)		yes	
Klixon	51172	yes		<b>OIL SYSTEMS</b>			
<b>GAS SYSTEMS</b>				<b>Interrupted Ignition</b>			
<b>Direct Spark Ignition Module</b>				Honeywell	R8404A	yes	
Honeywell	S825C	yes		Honeywell	R8185E	yes	
Honeywell	S825D	yes		Robertshaw	SJ4001-2001	no	R8239D1015
Honeywell	S87B	yes		White-Rodgers	669-430	yes	
Fenwal	05-162426	no	R8239D1015	<b>Constant Ignition</b>			
Fenwal	05-21	no	R8239D1015	Honeywell	R8184G	yes	
<b>Intermittent Pilot Module (non 100% shutoff)</b>				Robertshaw	SJ4007-204	no	R8239D1015
Honeywell	S86A	yes		White-Rodgers	668-430	yes	
Honeywell	S86C	yes		<b>VENT DAMPERS</b>			
Honeywell	S86D	yes		Honeywell	D80B,D	yes	
Robertshaw	SP 710-929	yes		Robertshaw	AVD-E-780-90	no	R8239D1015
Robertshaw	SP 730-929	yes		Johnson (Penn Baso)	M15AC-1	yes	
Robertshaw	SP 712 series	yes		Flair	SPG 5-21	yes	
White-Rodgers	36C84/50A22	yes		<b>ZONE CONTROL</b>			
Camstat	SIG-24	yes		<b>Hot Water Valves</b>			
Spectrol	990-195	yes		Honeywell	V8043F	yes	
Johnson (Penn Baso)	G60RHL	no	R8239D1015	Taco	571-2	no	R8239A1052
Johnson (Penn Baso)	CSA42A/Y79	no	R8239D1015	Flair	VJ100	no	R8239A1052
Johnson (Penn Baso)	CSA42A	yes		Electro Zone	RB-4	no	R8239D1015
<b>Powerpile (self-powered, millivolt)</b>				<b>HEAT/COOL INTERLOCK</b>			
All Models		no	R8239D1015	Lennox	GCSI Series	no	R8239 with RC-R thermostat

The wallplate does not require leveling for operation, but for appearance only.

The wallplate mounts directly onto the wall with the screws and anchors included in the package. Use the wallplate as a template, and with a pencil, mark two of the three mounting holes in the wallplate (Fig. 3). If drywall construction, plastic anchors must be used; use 3/16 in. bit to drill holes for anchors. Gently tap anchors into holes until they are flush to the wall surface. Thread wires through the center opening of the wallplate. Then, mount the wallplate using two screws provided. Gently tighten screws, level top surface of wallplate, then securely tighten screws.

#### WIRING

All wiring must comply with local electrical codes and ordinances.

Disconnect power before wiring to prevent electrical shock or equipment damage.

The shape of the terminal barrier permits insertion of straight or conventional wraparound wiring connections. Either method is acceptable (Fig. 5).

Push excess wire back into the hole, and plug hole with nonhardening caulk, putty, or insulation to prevent drafts from affecting thermostat operation.

Refer to Figs. 6-49 for typical hookups of wallplate and thermostat. For T8600 single transformer system using wallplate with RC, R terminals, jumper RC and R as shown in Fig. 4.

**NOTE:** Keep all wiring restricted to ribbed area surrounding terminals (Fig. 5) to assure thermostat/wallplate contact.

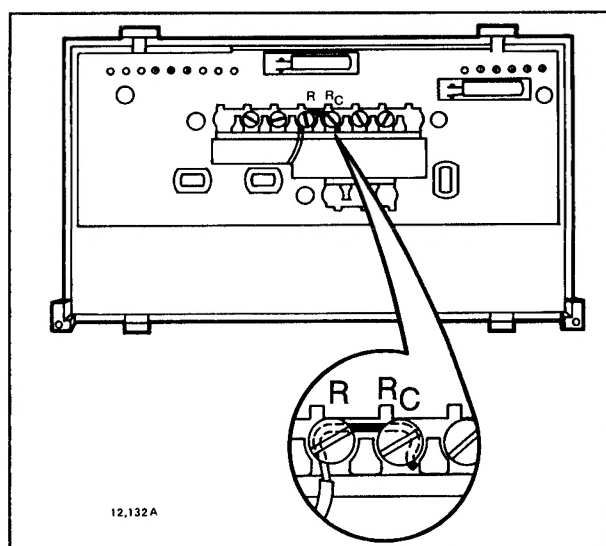


FIG. 4—JUMPER RC AND R FOR SINGLE TRANSFORMER. STRIP WIRE 3/4 in [19 mm].

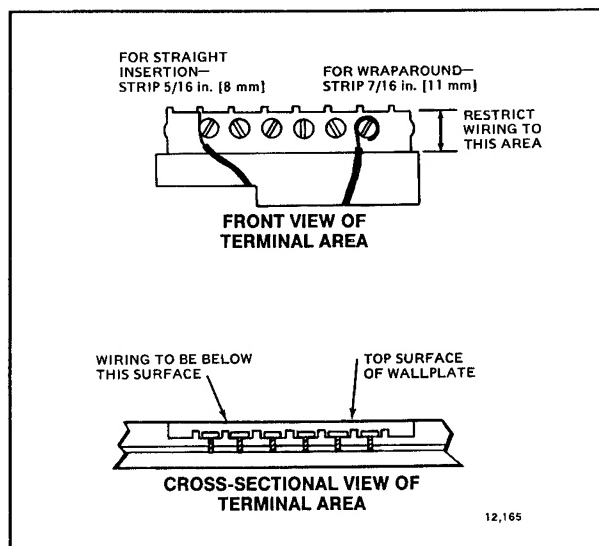


FIG. 5—KEEP WIRING RESTRICTED TO RIBBED AREA SURROUNDING TERMINALS.

List of Wiring Diagrams

	Fig. No.		Fig. No.
<b>T8600A,B (heat only)</b>			
gas or central electric	6	electric, decentralized	10
oil	7	zone valves, incompatible or 3-wire	11
Intermittent Pilot	8	zone valves, Honeywell or	12
isolating relay	9	compatible 2-wire	
<b>T8600C (heat/cool)</b>			
gas heat/electric cool,		electric heat/electric cool,	
electric heat/electric cool	13	thermostat-controlled fan	16
oil heat/electric cool	14	electric cool only	17
isolating relay	15	single-stage electric heat pump	18
<b>T8600C,D (heat/cool)</b>			
gas heat/electric cool, single transformer	19	oil heat/electric cool	21
gas heat/electric cool, two transformer	20	isolating switching center	22
<b>T8601A,B (heat only)</b>			
gas or central electric	23	zone valves, incompatible or 3-wire	26
oil	24	zone valves, Honeywell or compatible 2-wire	27
Intermittent Pilot	25		
<b>T8601C (heat/cool)</b>			
gas heat/electric cool,		single-stage electric heat pump	30
electric heat/electric cool	28	electric heat/electric cool	31
oil heat/electric cool	29		
<b>T8601D (heat/cool)</b>			
gas heat/electric cool	32	oil heat/electric cool	33
<b>T8602A,B (heat only)</b>			
gas or central electric	34	zone valves, incompatible or 3-wire	37
oil	35	zone valves, Honeywell or	12
Intermittent Pilot	8	compatible 2-wire	
electric, decentralized	36		
<b>T8602C (heat/cool)</b>			
gas heat/electric cool, two transformer	38		
with fan operation switch			



	Fig. No.		Fig. No.
<b>T8602C (heat/cool)</b>			
gas heat/electric cool, two transformer	39	oil heat/electric cool	41
gas heat/electric cool, electric heat/electric cool	40		
<b>T8603A,B (heat only)</b>			
gas	42	zone valves, incompatible or 3-wire	45
oil	43	zone valves, Honeywell or	46
Intermittent Pilot	44	compatible 2-wire	
<b>T8603C (heat/cool)</b>			
gas heat/electric cool, electric heat/electric cool	47	electric heat/electric cool, gas heat/electric cool, thermostat-controlled fan	49
oil heat/electric cool	48		

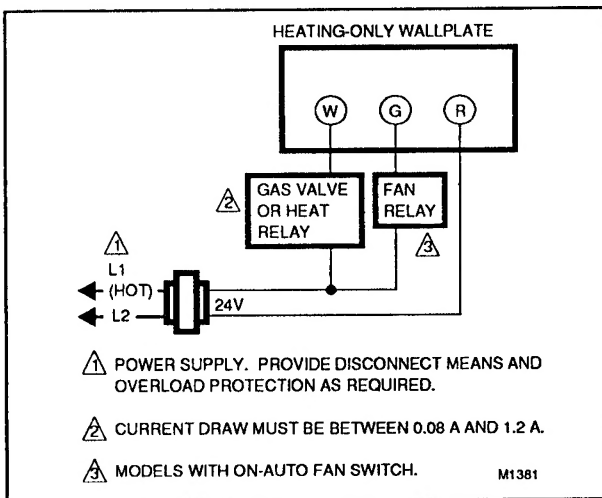


FIG. 6—T8600A,B HEATING-ONLY CIRCUIT IN CONTINUOUS PILOT GAS OR CENTRAL ELECTRIC SYSTEM.

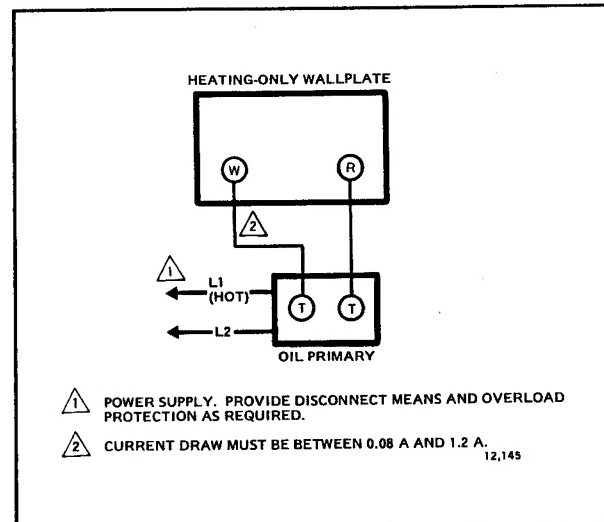


FIG. 7—T8600A,B HEATING-ONLY CIRCUIT IN AN OIL SYSTEM.

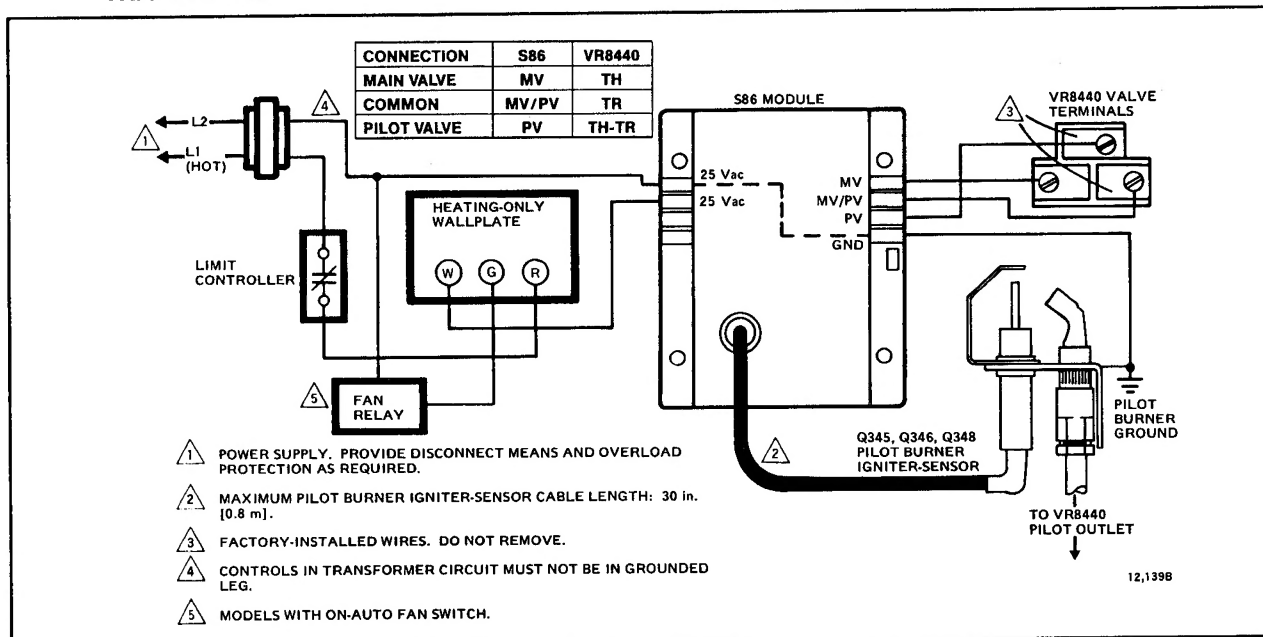


FIG. 8—T8600A,B; T8602A,B HEATING-ONLY CIRCUIT IN A HONEYWELL INTERMITTENT PILOT GAS BURNING IGNITION SYSTEM.

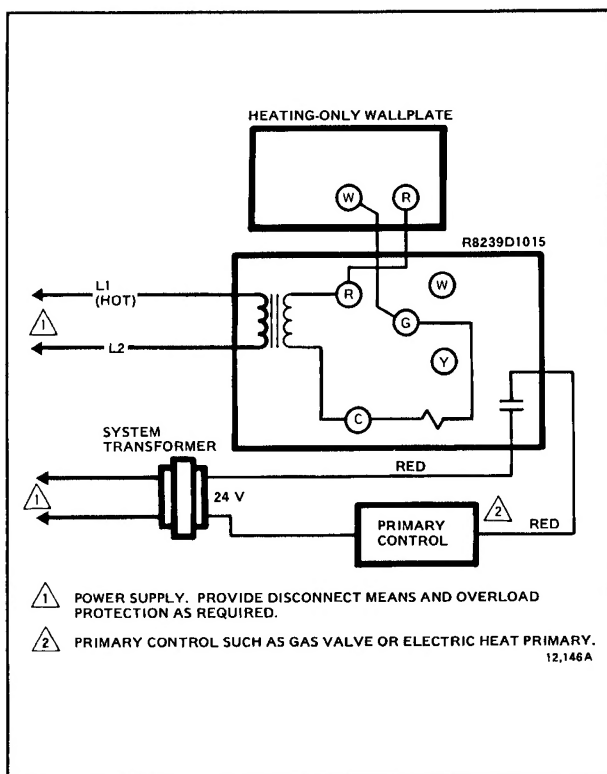


FIG. 9—T8600A,B HEATING-ONLY CIRCUIT USING AN R8239D1015 ISOLATING RELAY. SEE TABLE III FOR USAGE.

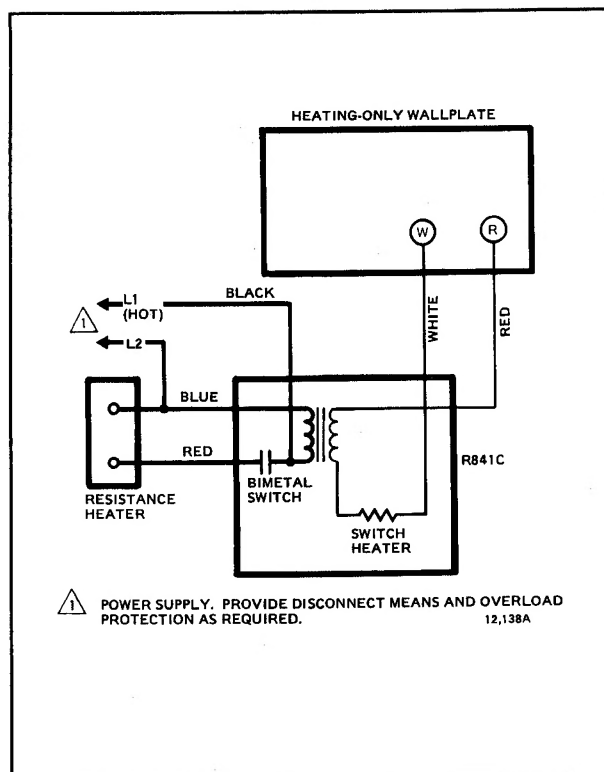


FIG. 10—T8600A,B HEATING-ONLY CIRCUIT IN AN ELECTRIC BASEBOARD OR CEILING CABLE SYSTEM.

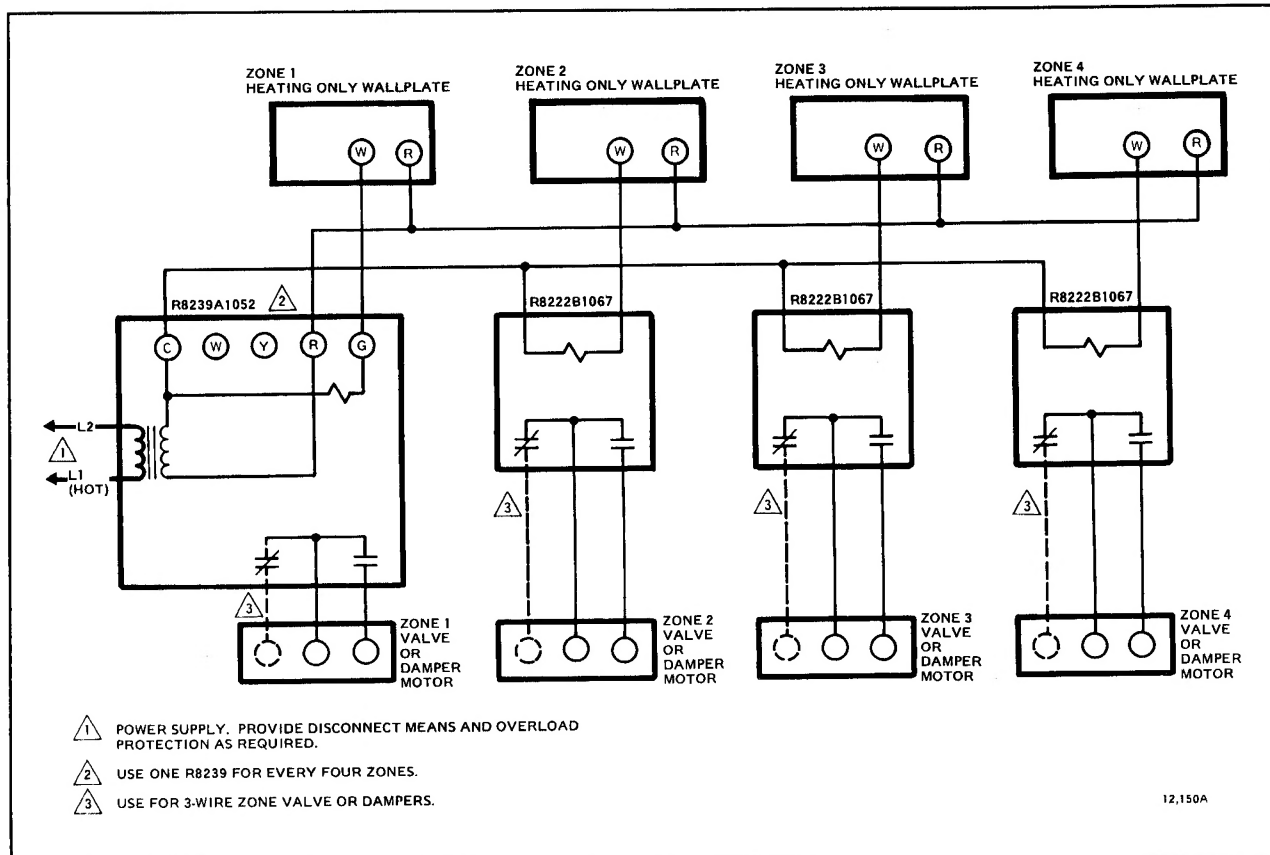


FIG. 11—T8600A,B CIRCUIT FOR CONTROLLING INCOMPATIBLE OR 3-WIRE ZONE VALVES OR DAMPERS. HEATING OR COOLING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE.



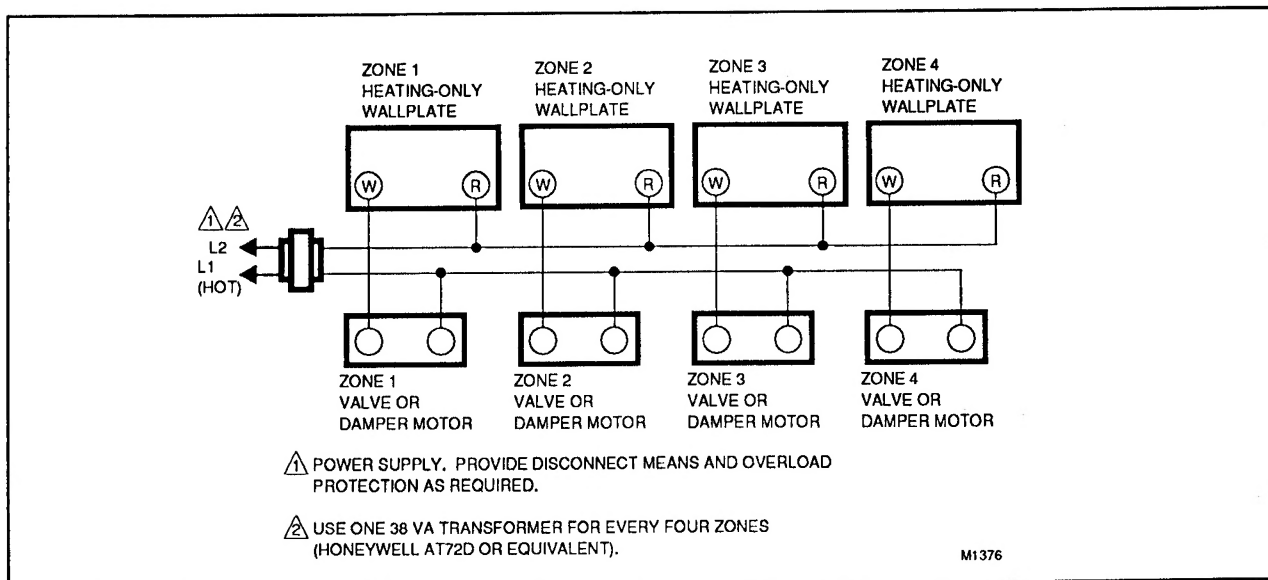


FIG. 12—T8600A,B; T8602A,B CIRCUIT FOR CONTROLLING HONEYWELL OR COMPATIBLE 2-WIRE ZONE VALVES OR DAMPERS, HEATING OR COOLING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE.

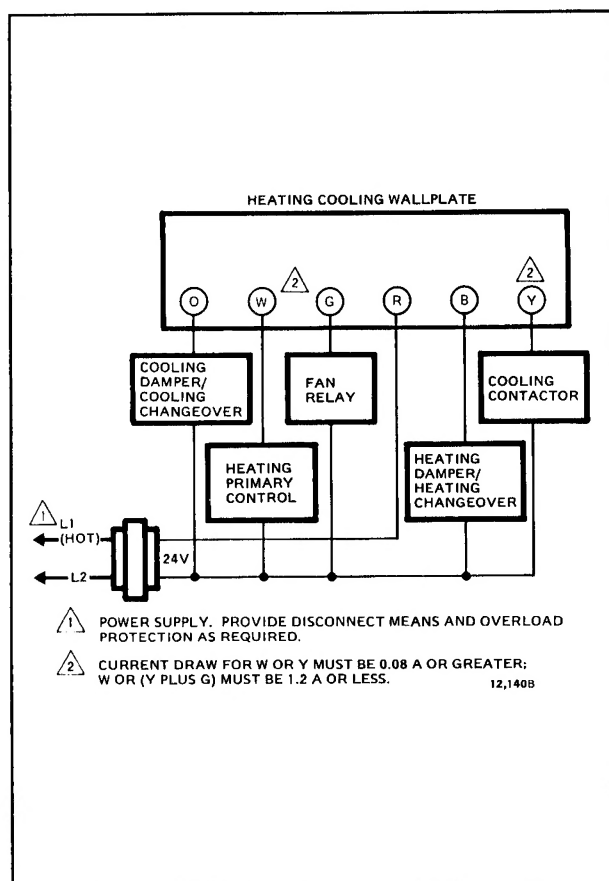


FIG. 13—T8600C HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH GAS HEAT/ELECTRIC COOLING OR ELECTRIC HEAT/ELECTRIC COOLING AND CHANGEOVER TERMINALS (O,B). THERMOSTAT CONTROLS FAN IN COOLING ONLY (TYPICAL MULTISPEED FAN APPLICATIONS).

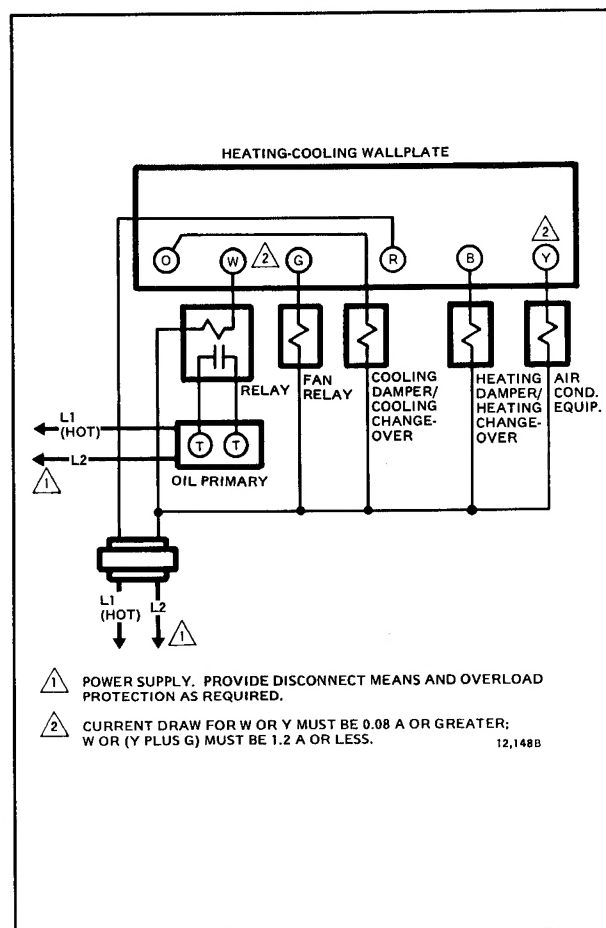


FIG. 14—T8600C HEATING/COOLING CIRCUIT IN AN OIL HEATING/ELECTRIC COOLING SYSTEM WITH CHANGEOVER TERMINALS (O,B). HEATING TRANSFORMER IS IN OIL PRIMARY. ALSO SEE FIG. 21 (RC, R TERMINALS).

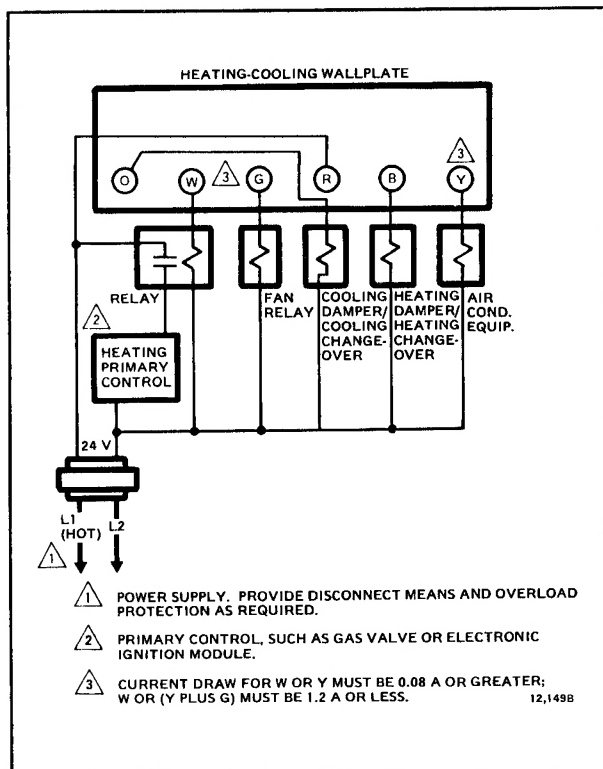


FIG. 15—T8600C HEATING/COOLING CIRCUIT USING AN ISOLATING RELAY WITH CHANGEOVER TERMINALS (O,B). SEE TABLE III FOR USAGE.

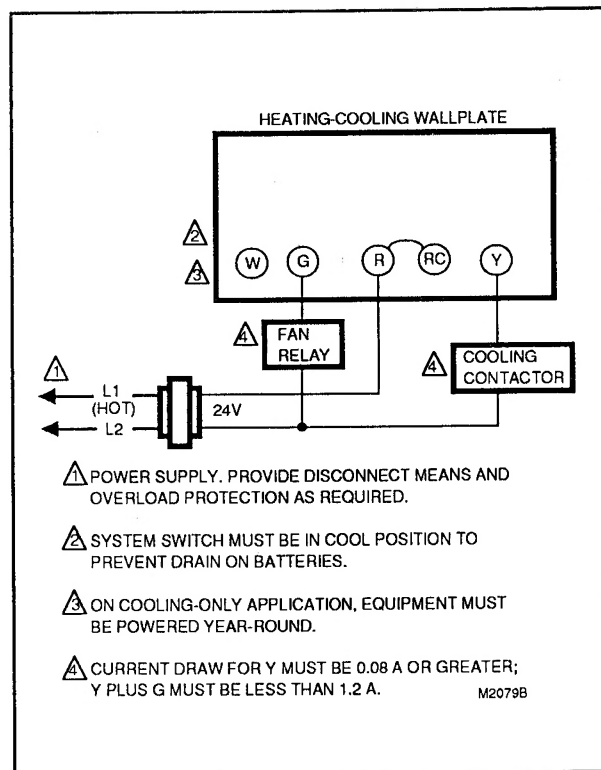


FIG. 17—T8600C COOLING CIRCUIT IN SINGLE TRANSFORMER SYSTEM WITH ELECTRIC COOLING.

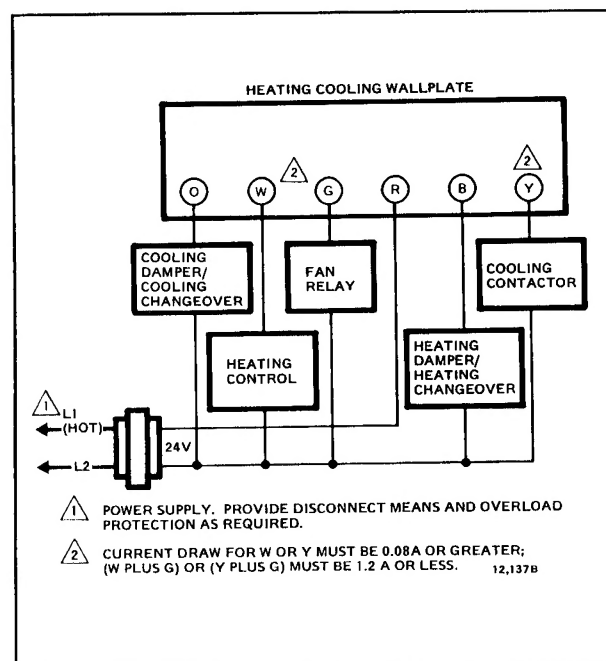


FIG. 16—T8600C SUPER TRADELINE HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH ELECTRIC HEAT/ELECTRIC COOLING AND CHANGEOVER TERMINALS (O,B). THERMOSTAT CONTROLS FAN IN HEAT AND COOL (TYPICAL SINGLE-SPEED FAN APPLICATIONS). SEE TABLE IV TO SET FAN OPERATION SWITCH.

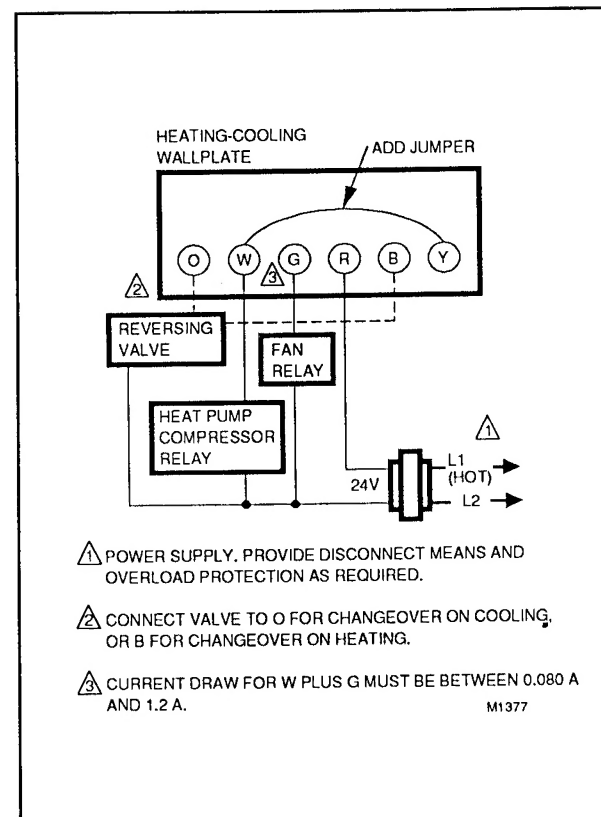


FIG. 18—T8600C HEATING/COOLING CIRCUIT FOR A SINGLE-STAGE ELECTRIC HEAT PUMP WITH CHANGEOVER TERMINALS (O,B).

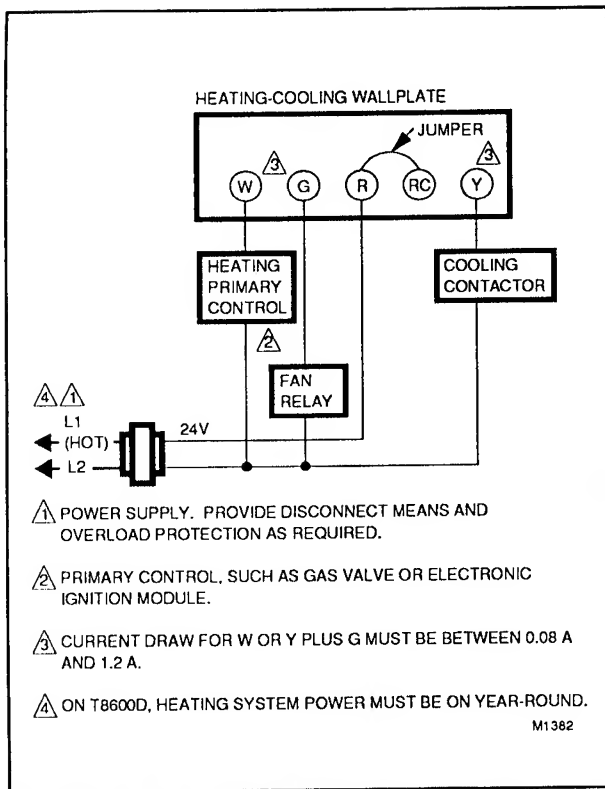


FIG. 19—T8600C,D HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH GAS HEAT/ELECTRIC COOLING, RC AND R TERMINALS.

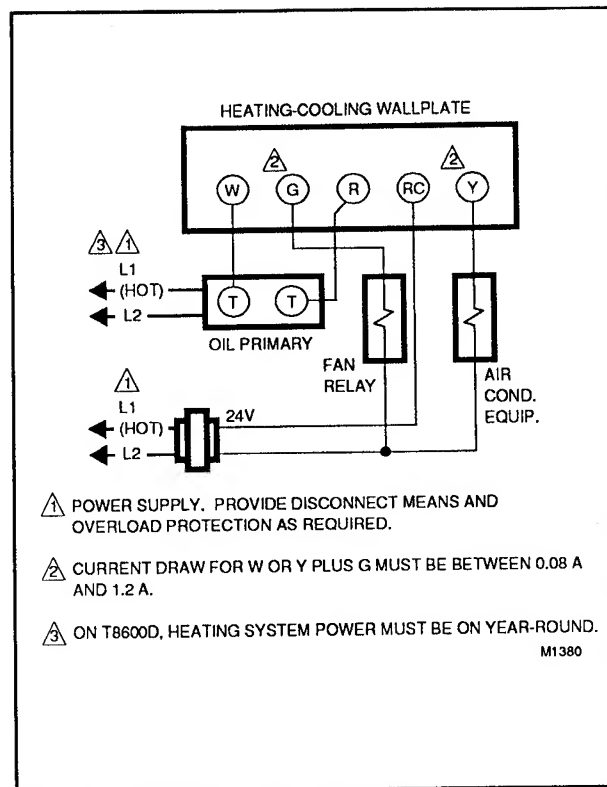


FIG. 21—T8600C,D HEATING/COOLING CIRCUIT IN AN OIL HEATING/ELECTRIC COOLING SYSTEM. HEATING TRANSFORMER IS IN OIL PRIMARY, RC AND R TERMINALS.

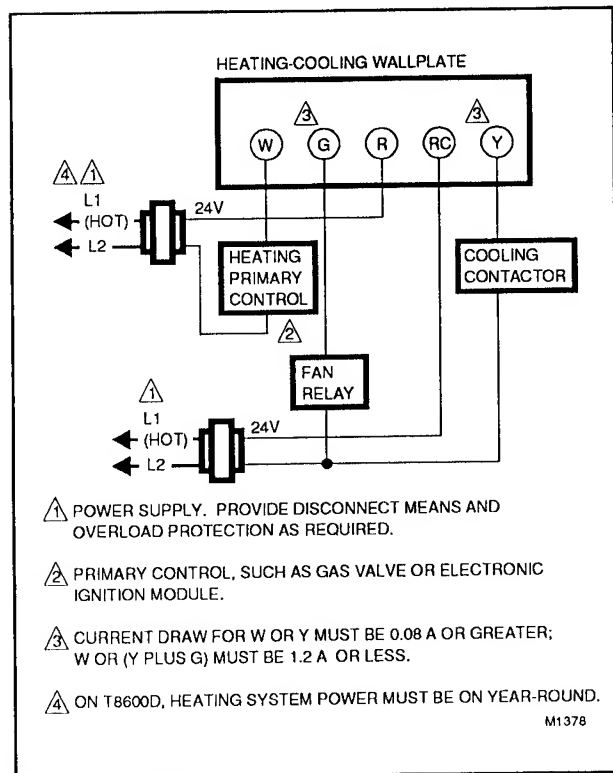


FIG. 20—T8600C,D HEATING/COOLING CIRCUIT IN A TWO-TRANSFORMER (ONE FOR HEATING, ONE FOR COOLING) SYSTEM WITH GAS HEAT/ELECTRIC COOLING, RC AND R TERMINALS.

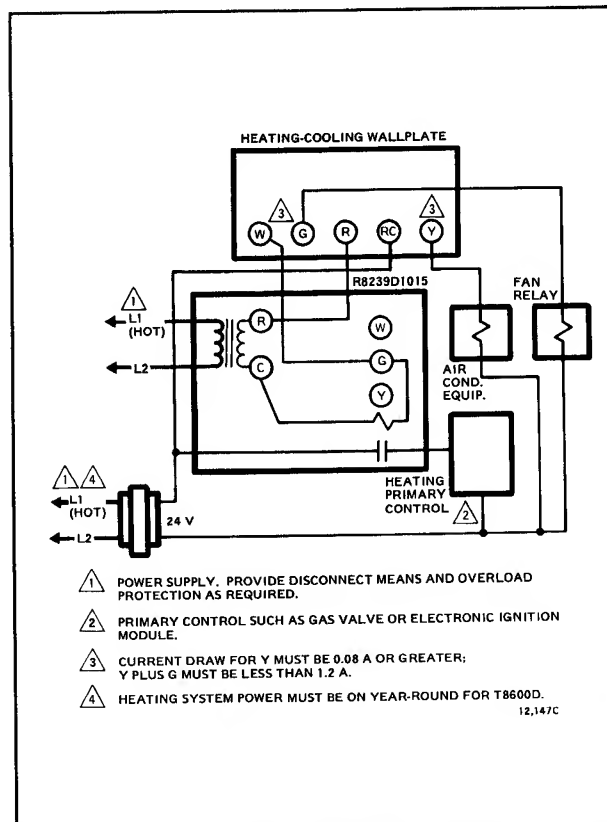


FIG. 22—T8600C,D HEATING/COOLING CIRCUIT USING AN R8239D ISOLATING SWITCHING CENTER.

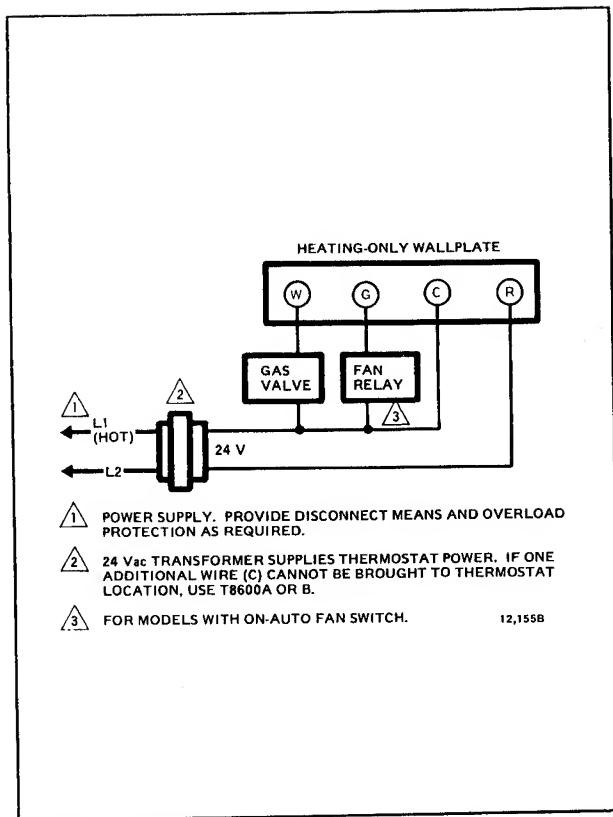


FIG. 23—T8601A,B HEATING-ONLY CIRCUIT IN CONTINUOUS PILOT GAS OR CENTRAL ELECTRIC SYSTEM.

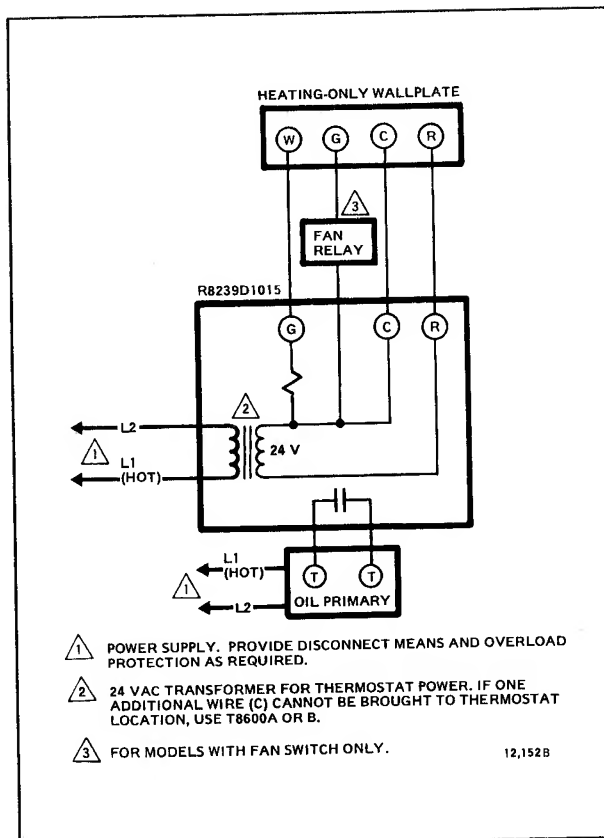


FIG. 24—T8601A,B HEATING-ONLY CIRCUIT IN AN OIL SYSTEM.

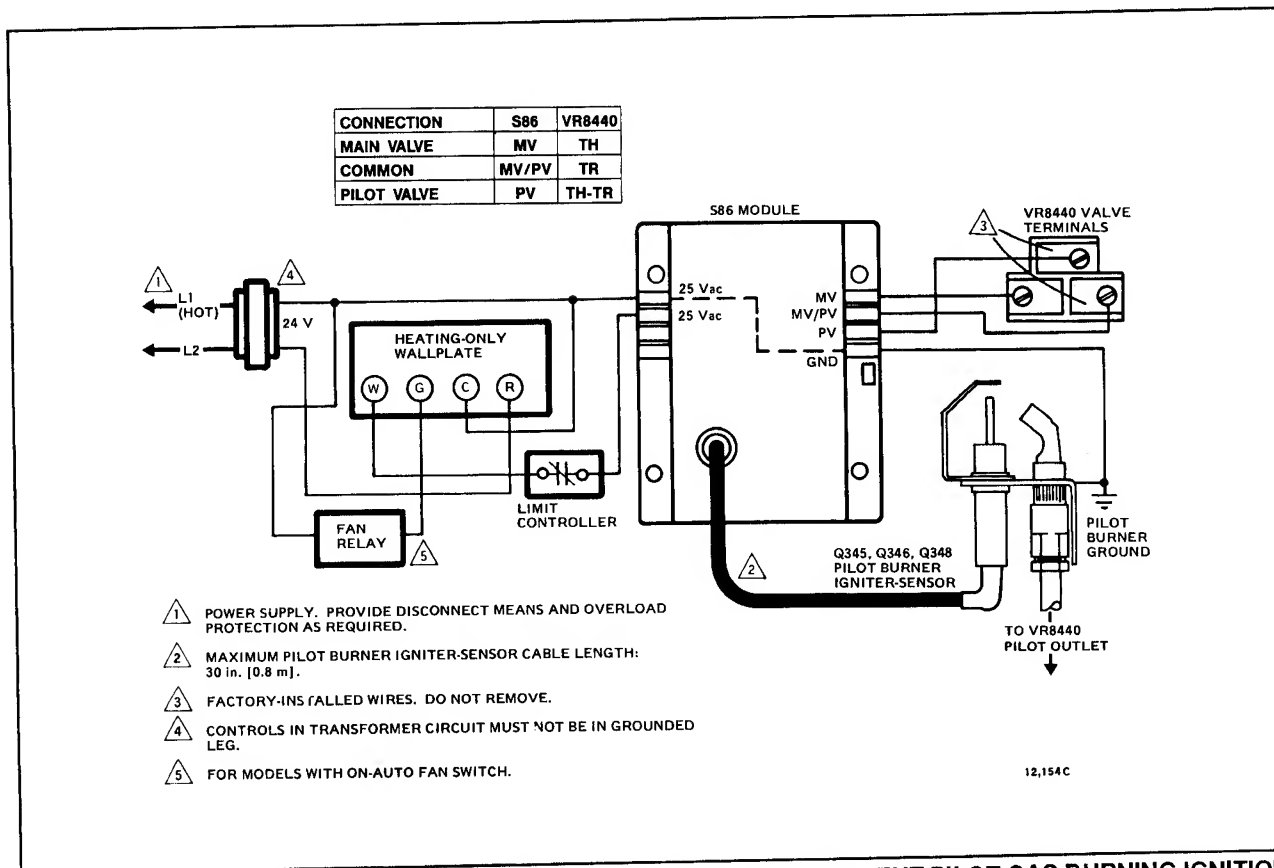


FIG. 25—T8601A,B HEATING-ONLY CIRCUIT IN A HONEYWELL INTERMITTENT PILOT GAS BURNING IGNITION SYSTEM.

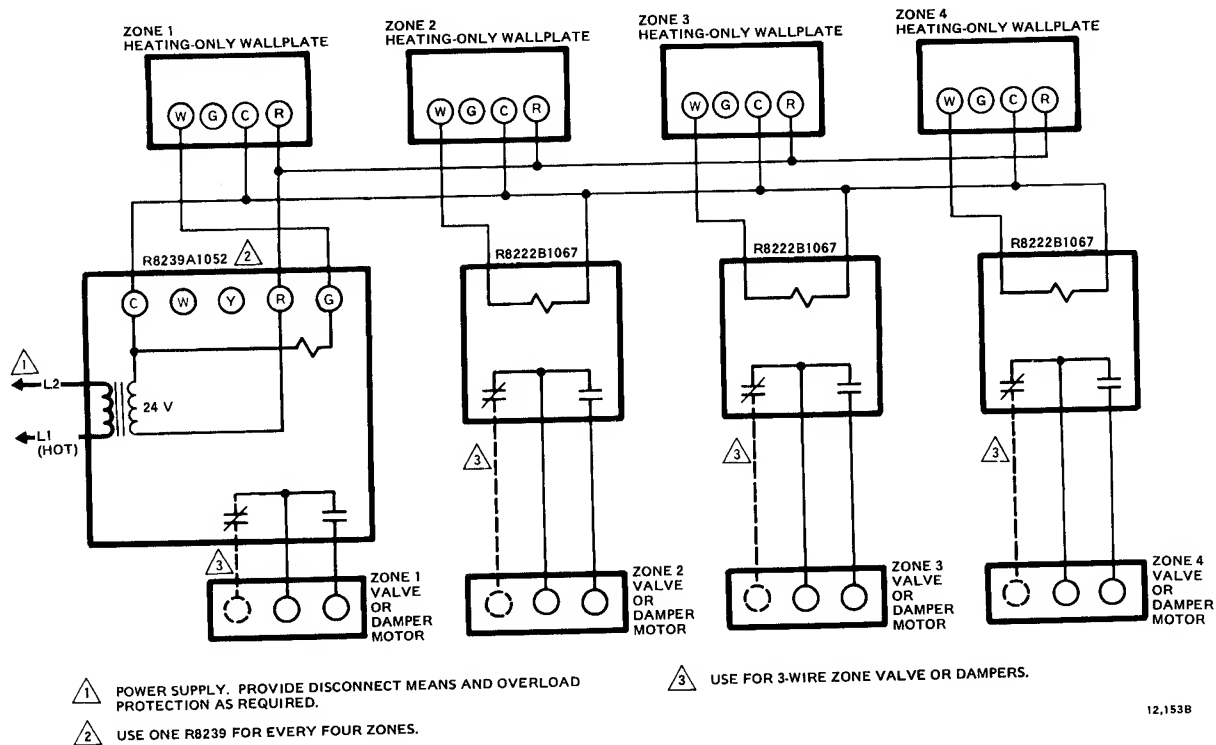


FIG. 26—T8601A,B circuit for controlling incompatible or 3-wire zone valves or dampers. HEATING OR COOLING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE. FOR HONEYWELL OR COMPATIBLE 2-WIRE VALVES, SEE FIG. 27.

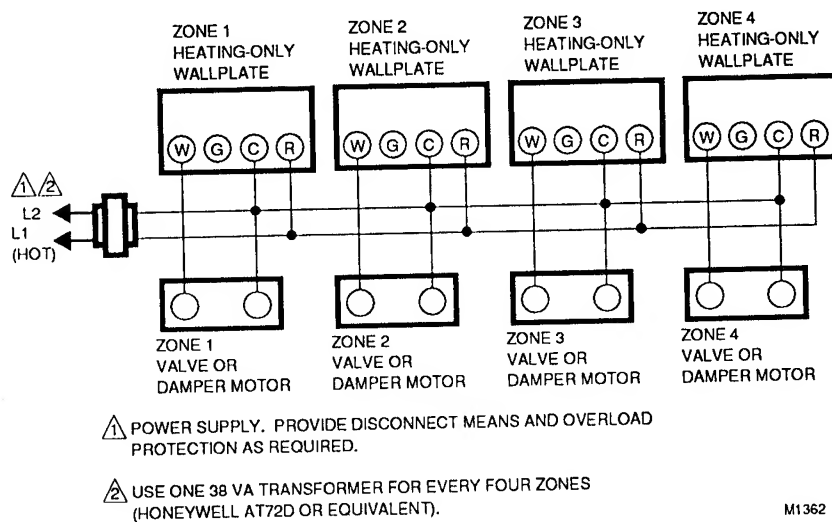


FIG. 27—T8601A,B circuit for controlling Honeywell or compatible two-wire zone valves or dampers. HEATING OR COOLING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE.

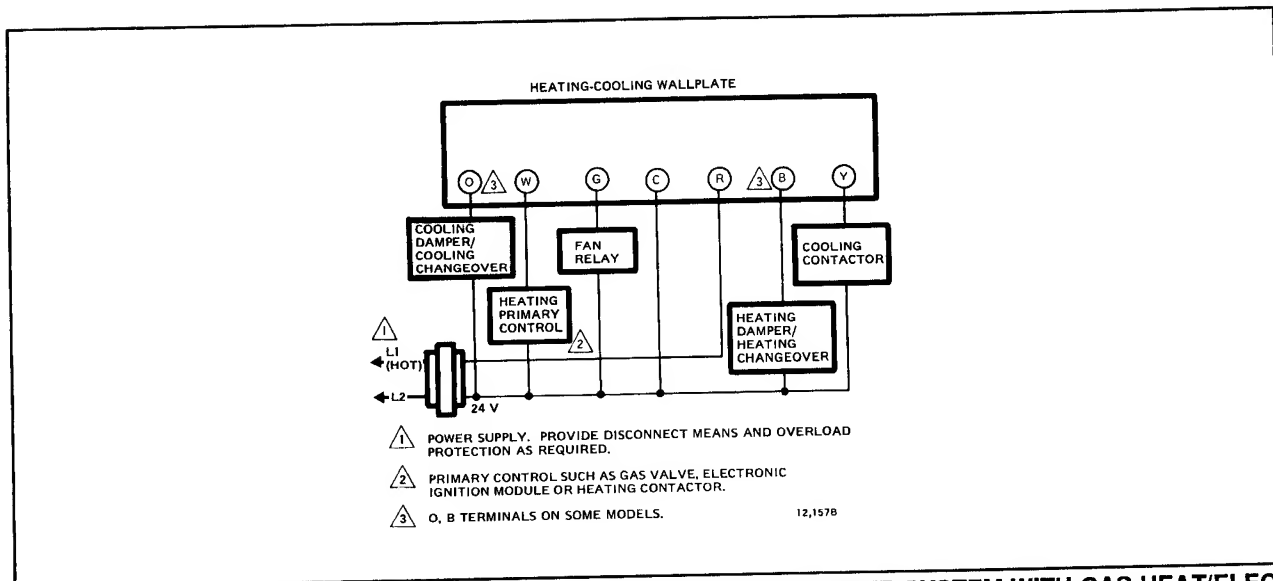


FIG. 28—T8601C HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH GAS HEAT/ELECTRIC COOLING, OR ELECTRIC HEAT/ELECTRIC COOLING AND CHANGEOVER TERMINALS (O,B). THERMOSTAT CONTROLS FAN IN COOLING ONLY (TYPICAL MULTISPEED FAN APPLICATIONS).

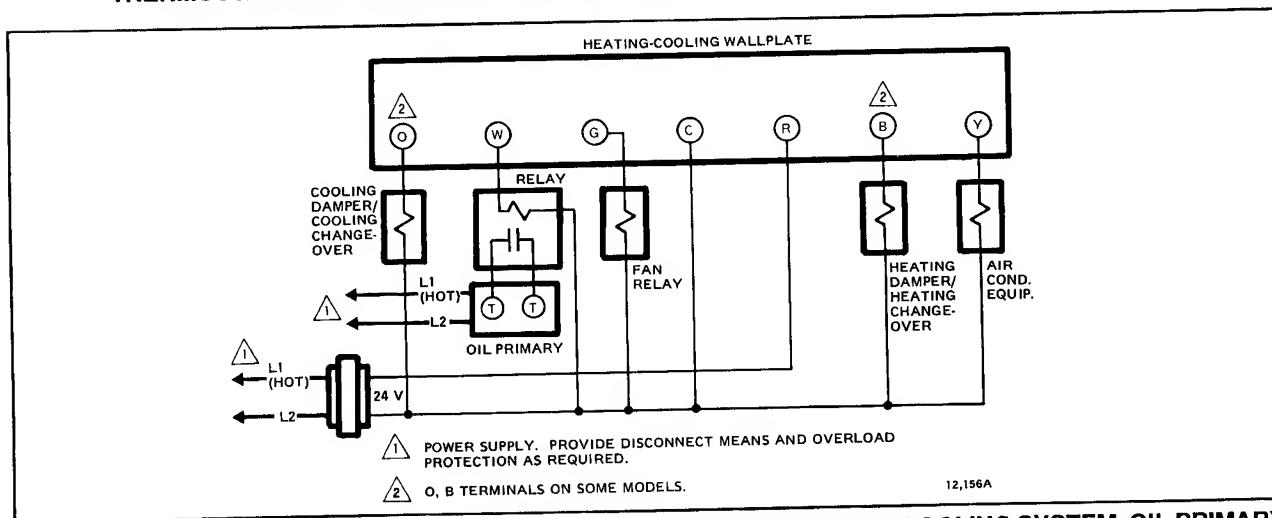


FIG. 29—T8601C HEATING/COOLING CIRCUIT IN AN OIL HEATING/ELECTRIC COOLING SYSTEM. OIL PRIMARY HAS ITS OWN TRANSFORMER.

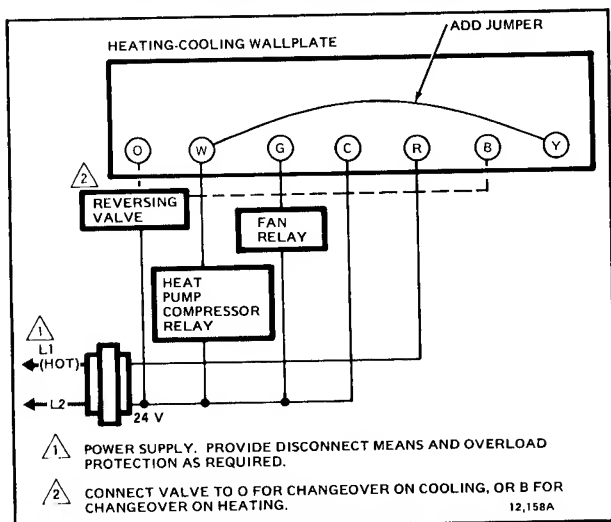


FIG. 30—T8601C HEATING/COOLING CIRCUIT FOR A SINGLE-STAGE ELECTRIC HEAT PUMP. FAN CONTROLLED BY THERMOSTAT.

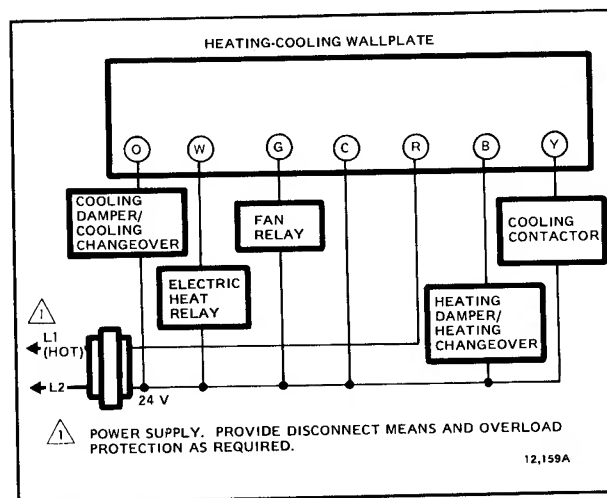


FIG. 31—T8601C HEATING/COOLING CIRCUIT FOR A CENTRAL ELECTRIC FURNACE/ELECTRIC COOLING. (TYPICAL SINGLE-SPEED FAN APPLICATIONS).

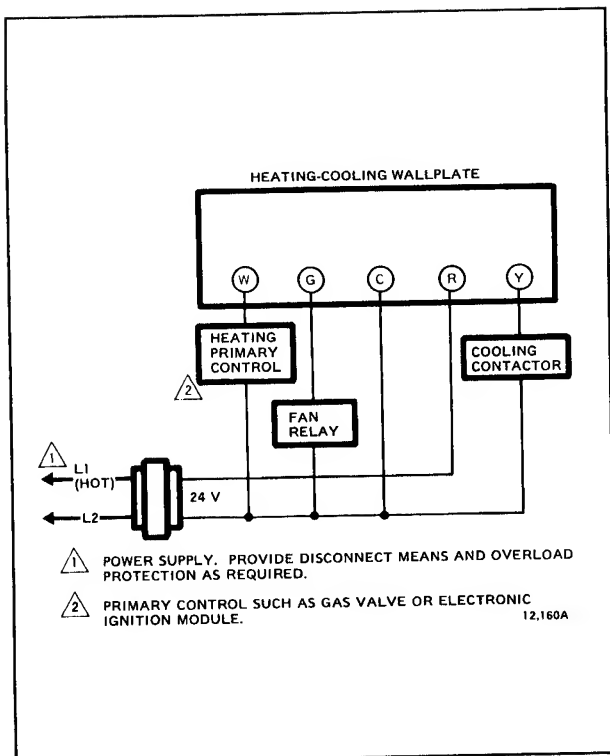


FIG. 32—T8601D HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH GAS HEAT/ELECTRIC COOLING.

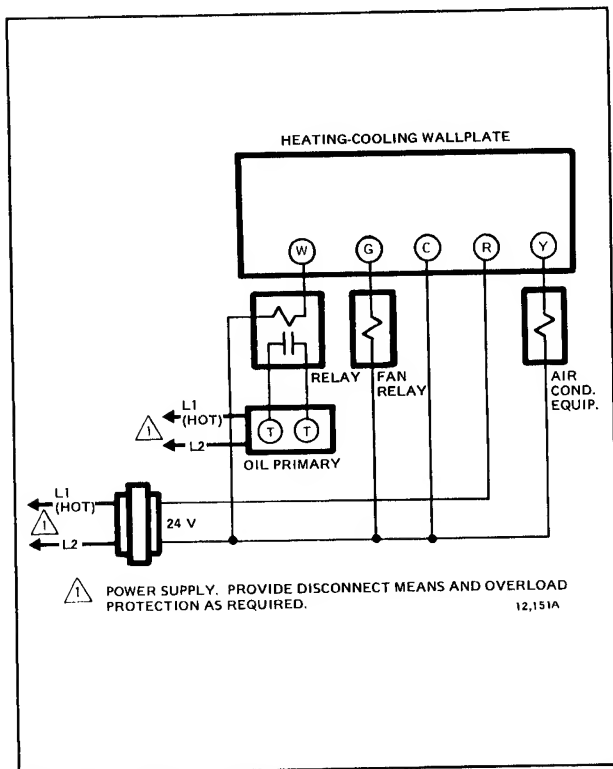


FIG. 33—T8601D HEATING/COOLING CIRCUIT IN AN OIL HEATING/ELECTRIC COOLING SYSTEM. OIL PRIMARY HAS ITS OWN TRANSFORMER.

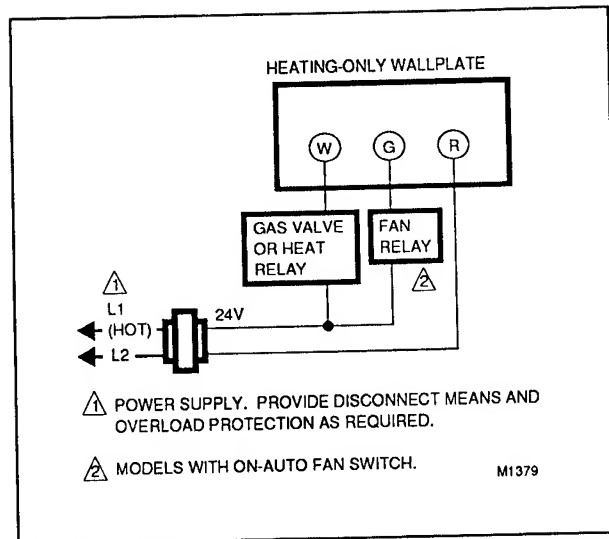


FIG. 34—T8602A,B HEATING-ONLY CIRCUIT IN CONTINUOUS PILOT GAS SYSTEM.

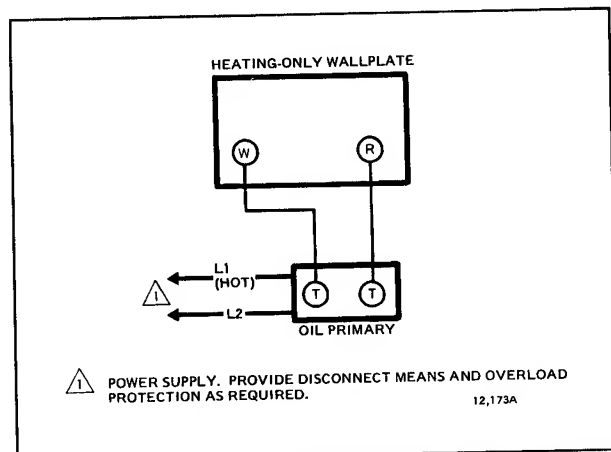


FIG. 35—T8602A,B HEATING-ONLY CIRCUIT IN AN OIL SYSTEM.

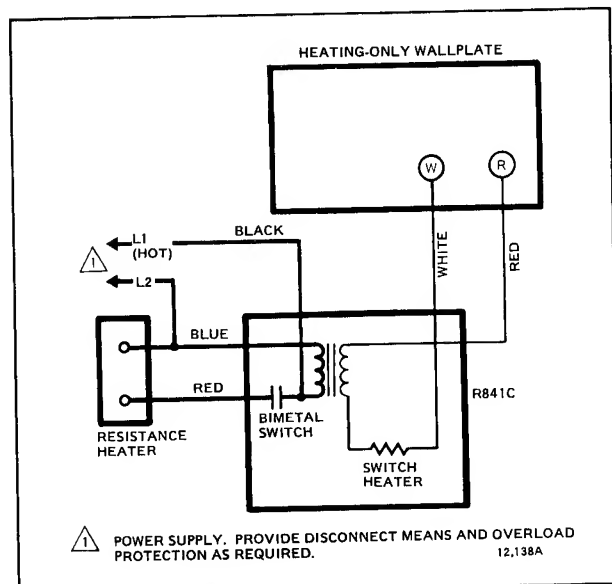


FIG. 36—T8602A,B HEATING-ONLY CIRCUIT IN AN ELECTRIC BASEBOARD OR CEILING CABLE SYSTEM.



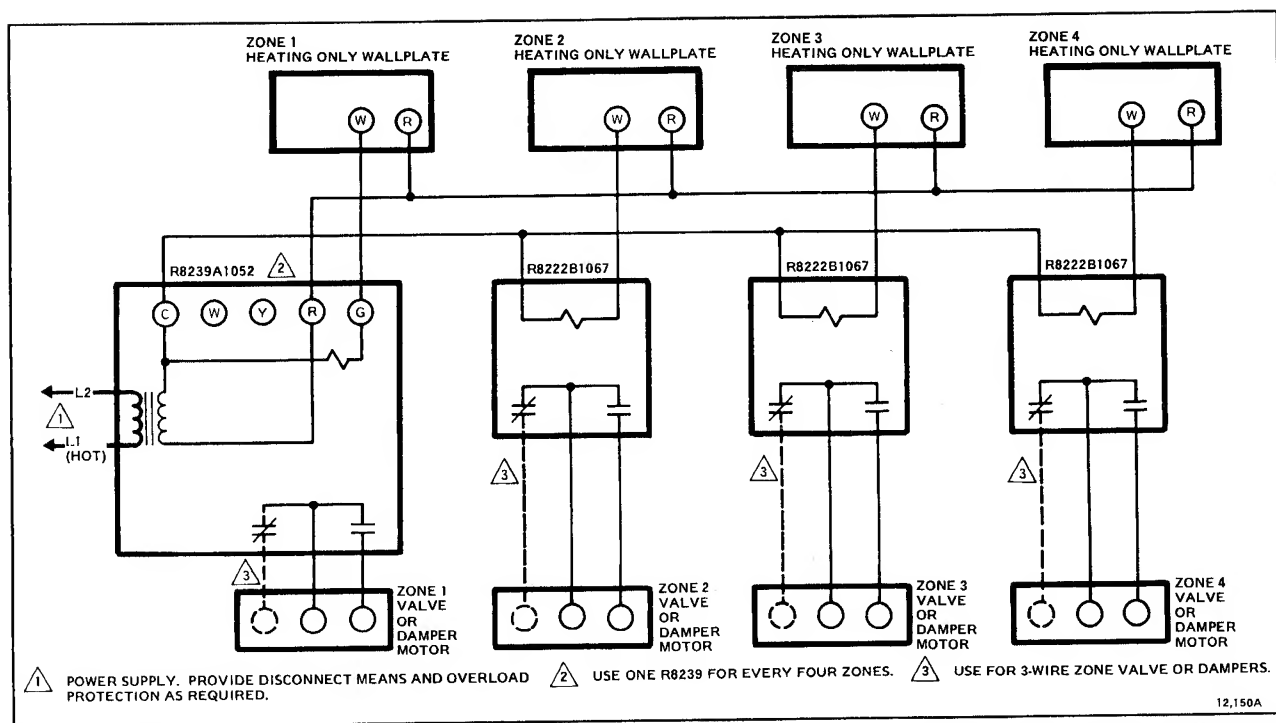


FIG. 37—T8602A,B CIRCUIT FOR CONTROLLING INCOMPATIBLE OR 3-WIRE ZONE VALVES OR DAMPERS. HEATING OR COOLING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE. FOR HONEYWELL OR COMPATIBLE 2-WIRE VALVES, SEE FIG. 12.

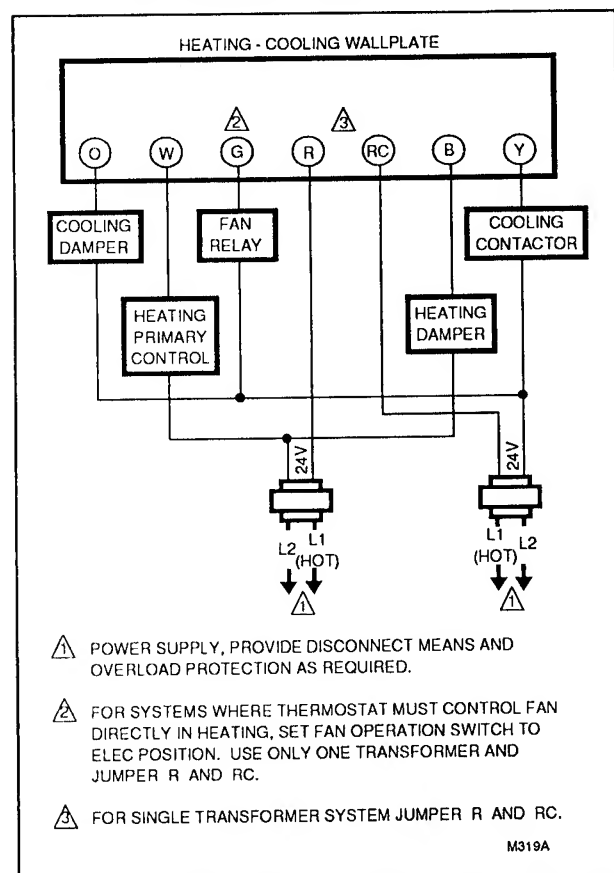


FIG. 38—T8602C SUPER TRADELINE HEATING/COOLING CIRCUIT IN A TWO-TRANSFORMER SYSTEM (GAS HEATING/ELECTRIC COOLING). SEE TABLE IV TO SET FAN OPERATION SWITCH.

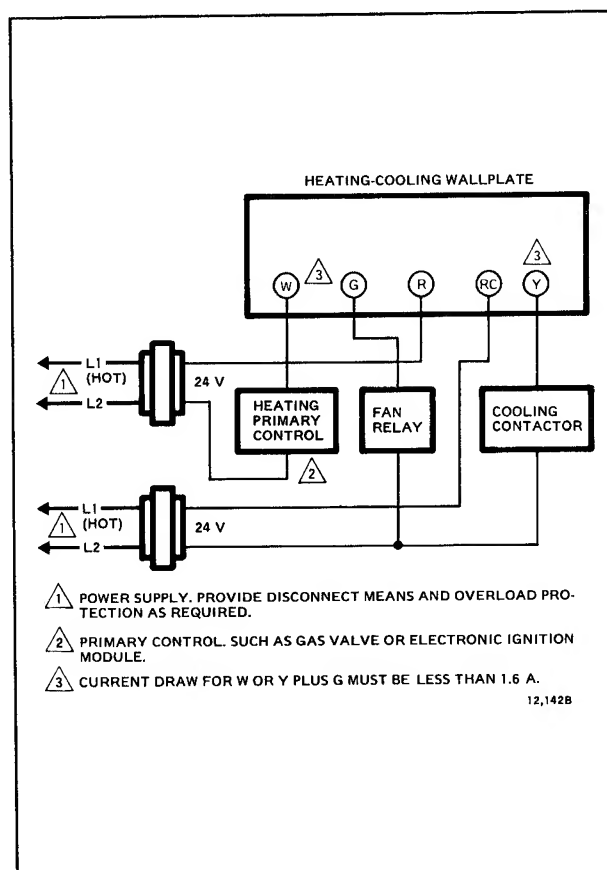


FIG. 39—T8602C HEATING/COOLING CIRCUIT IN A TWO-TRANSFORMER (ONE FOR HEATING, ONE FOR COOLING) SYSTEM WITH GAS HEAT/ELECTRIC COOLING, RC AND R TERMINALS.

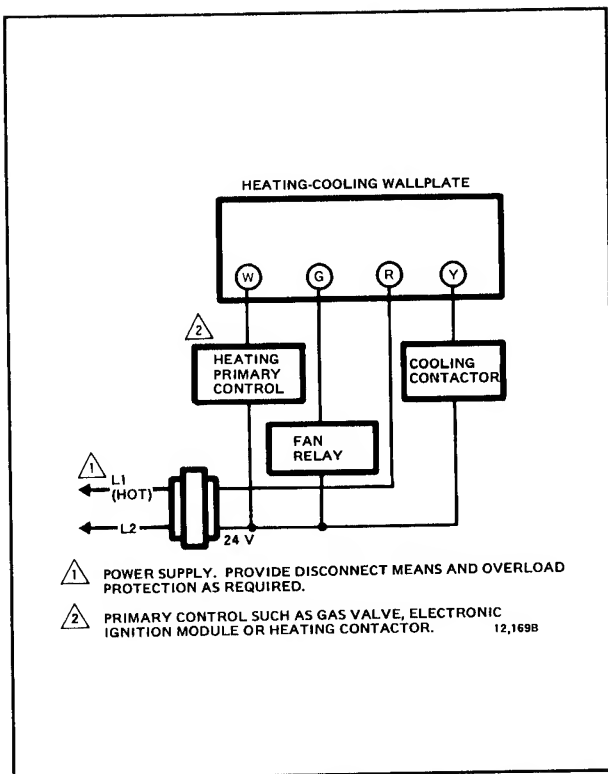


FIG. 40—T8602C HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH GAS HEAT/ELECTRIC COOLING OR ELECTRIC HEAT/ELECTRIC COOLING. THERMOSTAT CONTROLS FAN IN COOLING ONLY (TYPICAL MULTISPEED FAN APPLICATION).

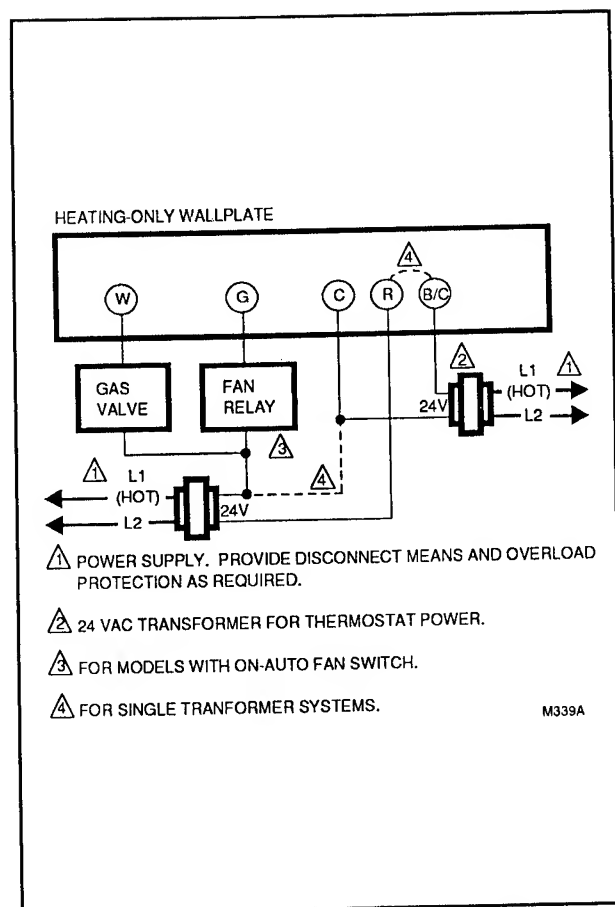


FIG. 42—T8603A,B HEATING-ONLY CIRCUIT IN A CONTINUOUS PILOT GAS SYSTEM.

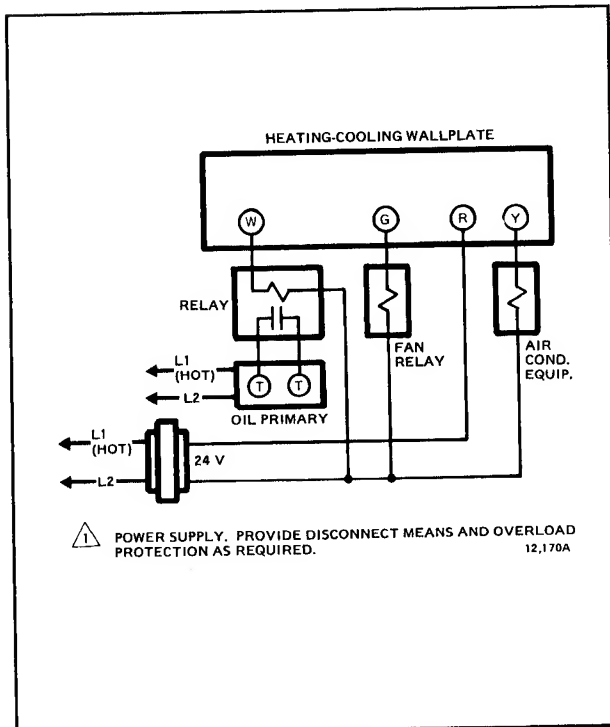


FIG. 41—T8602C HEATING/COOLING CIRCUIT IN AN OIL HEATING/ELECTRIC COOLING SYSTEM. HEATING TRANSFORMER IS IN OIL PRIMARY.

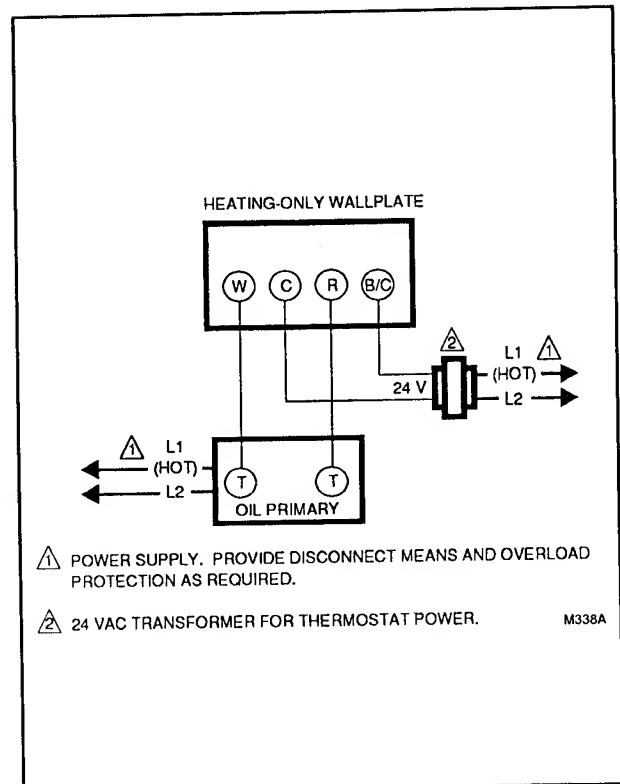


FIG. 43—T8603A,B HEATING-ONLY CIRCUIT IN AN OIL SYSTEM.

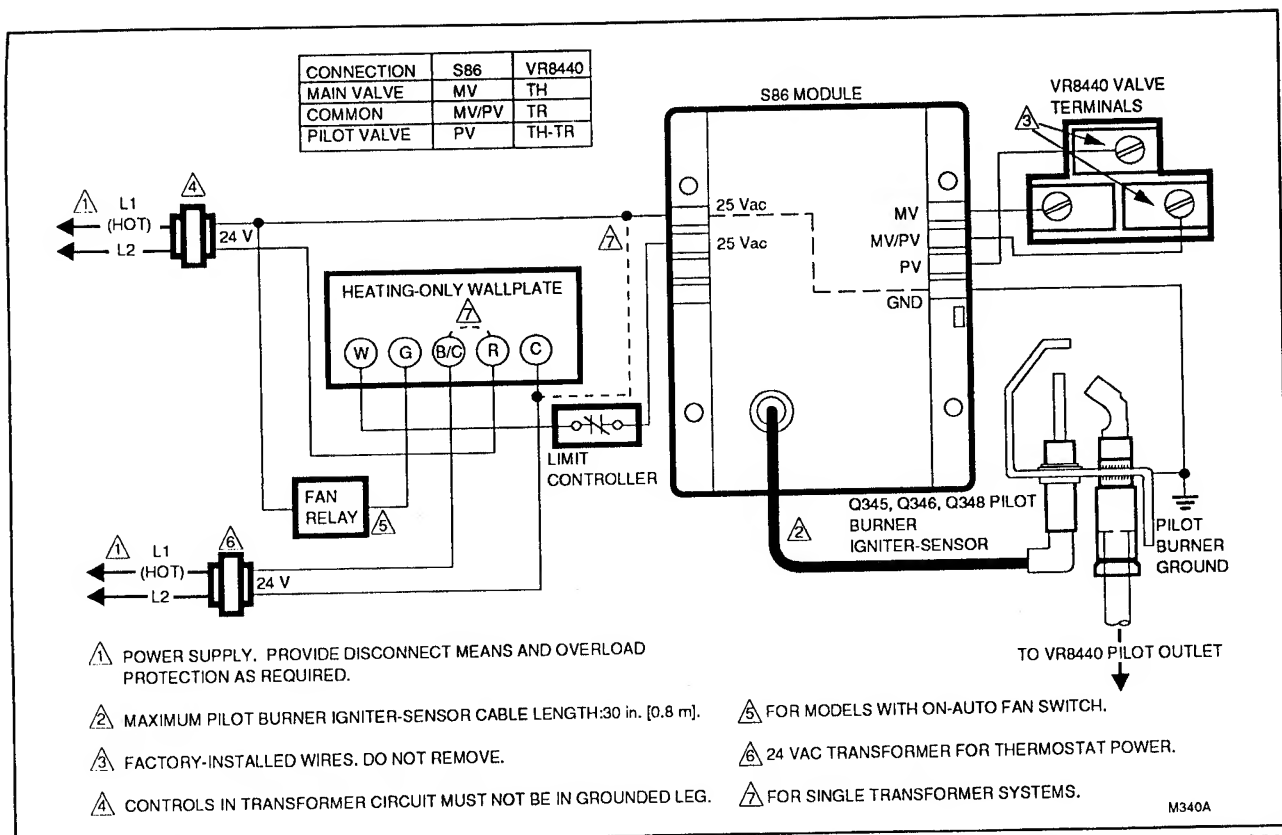


FIG. 44—T8603A,B HEATING-ONLY CIRCUIT IN A HONEYWELL INTERMITTENT PILOT GAS BURNER IGNITION SYSTEM.

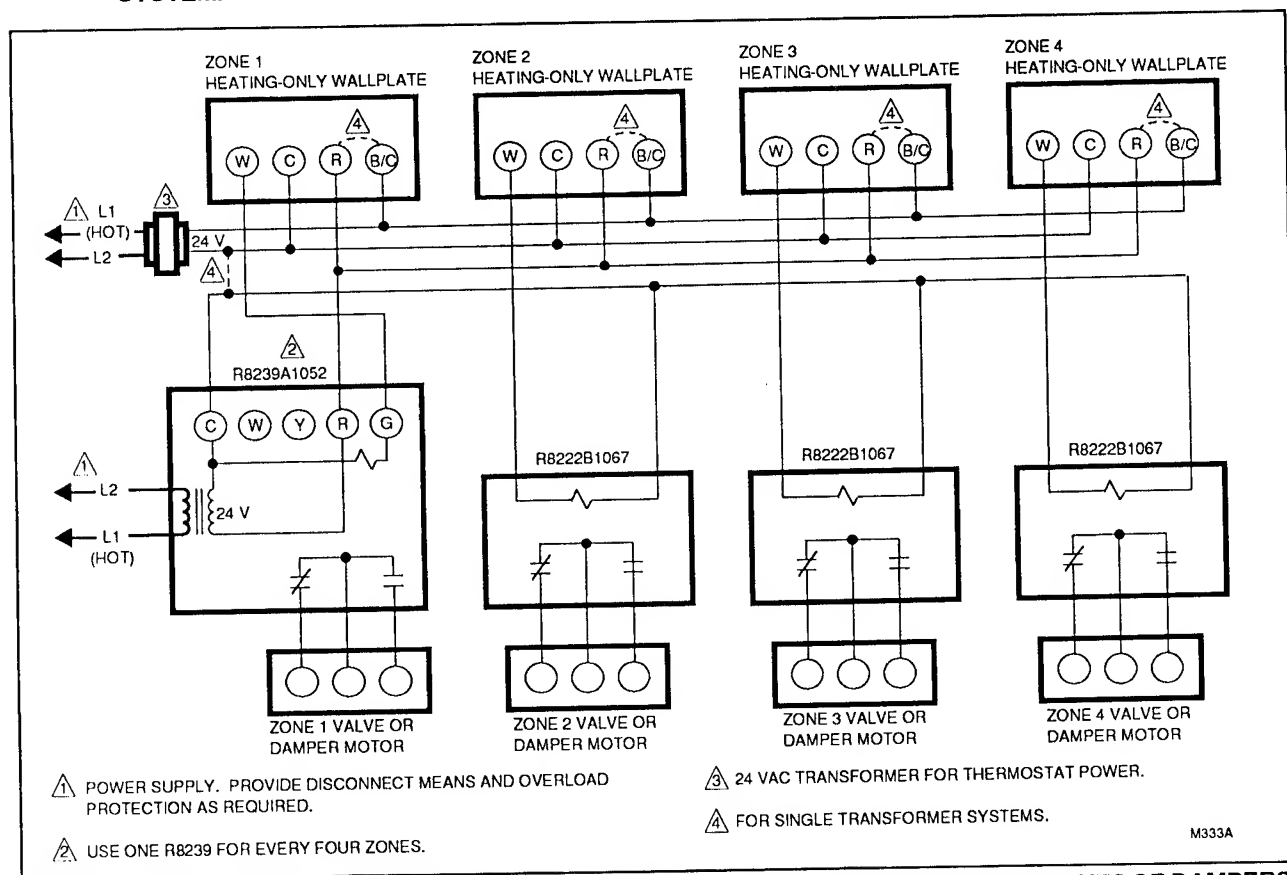


FIG. 45—T8603A,B CIRCUIT FOR CONTROLLING INCOMPATIBLE OR THREE-WIRE ZONE VALVES OR DAMPERS. HEATING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE.

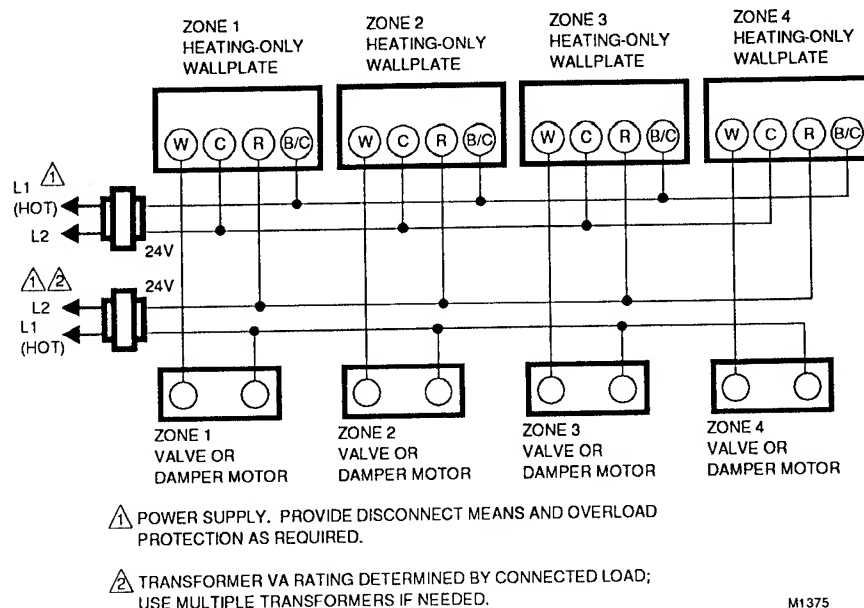


FIG. 46—T8603A,B CIRCUIT FOR CONTROLLING HONEYWELL OR COMPATIBLE TWO-WIRE ZONE VALVES OR DAMPERS. HEATING EQUIPMENT IS OPERATED BY AN END SWITCH ON THE ZONE VALVE OR MOTOR, OR BY A THERMOSTAT IN A MASTER ZONE.

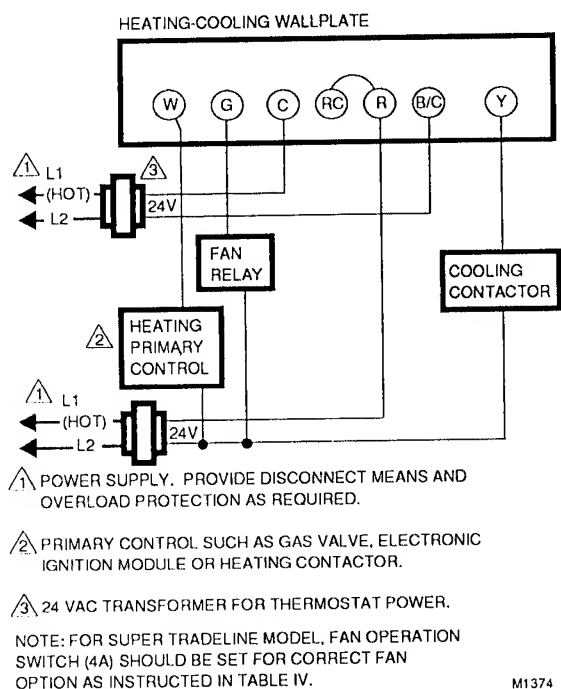


FIG. 47—T8603C HEATING/COOLING CIRCUIT IN A SINGLE TRANSFORMER SYSTEM WITH GAS HEAT/ELECTRIC COOLING, OR ELECTRIC HEAT/ELECTRIC COOLING. THERMOSTAT CONTROLS FAN IN COOLING ONLY OR HEAT AND COOL (TYPICAL MULTI-SPEED FAN APPLICATIONS).

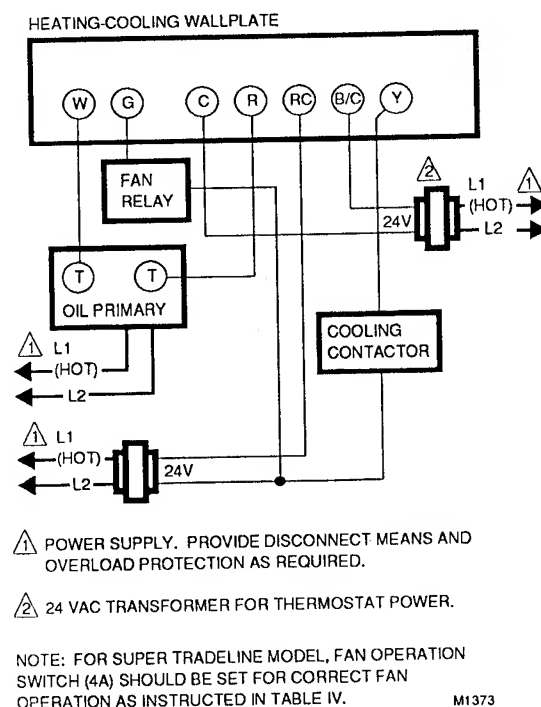
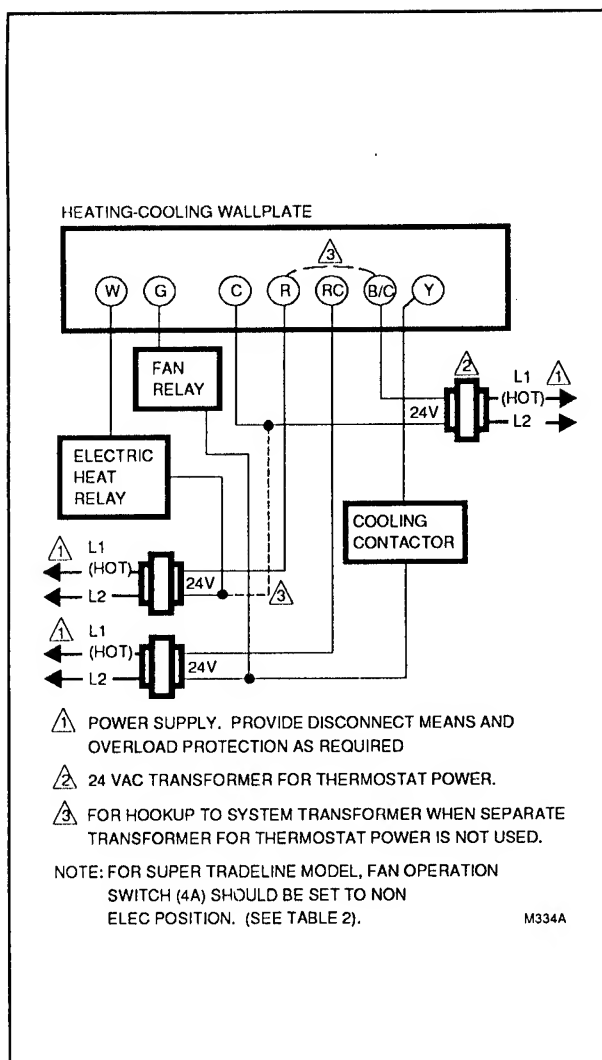


FIG. 48—T8603C HEATING/COOLING CIRCUIT IN AN OIL HEATING/ELECTRIC COOLING SYSTEM. OIL PRIMARY HAS ITS OWN TRANSFORMER.



**FIG. 49—T8603C HEATING/COOLING CIRCUIT FOR ELECTRIC HEAT/ELECTRIC COOLING OR GAS HEAT/ELECTRIC COOLING. THERMOSTAT CONTROLS FAN IN COOL ONLY (TYPICAL SINGLE-STAGE FAN APPLICATIONS). TWO SYSTEM TRANSFORMERS PLUS THERMOSTAT SUPPLY TRANSFORMER SHOWN.**

#### CYCLE RATE ADJUSTMENT

NOTE: MOST APPLICATIONS WILL NOT REQUIRE A CHANGE IN CYCLE RATE.

The room air temperature will normally vary slightly from the comfort temperature setting with the cycling of the furnace or air conditioner. The equipment cycles off and on as room temperature approaches the set point.

The cycle rate of this thermostat is set for heating at six cycles per hour and for cooling at three cycles per hour as shipped from the factory. The cooling cycle rate can not be adjusted. The heating cycle rate can be adjusted by turning one or both cycle rate adjustment screws located on the back of the thermostat. See Fig. 50. The screws should only be backed out about one-half to one turn, or be turned in until tight.

#### ADAPTIVE INTELLIGENT RECOVERY™/ CONVENTIONAL RECOVERY CONVERSION

The thermostat is factory-set for Adaptive Intelligent Recovery™, but may be converted to conventional recovery using screw 3A on the back of the thermostat as indicated in Fig. 50.

With Adaptive Intelligent Recovery™, the room will reach the comfort temperature at the exact time programmed into the thermostat. The control temperature will increase gradually, and turn the equipment on and off several times to reach the comfort temperature slowly and on time.

With conventional recovery, the start time should be programmed to be earlier than the desired comfort time.

#### TIME/TEMPERATURE CONVERSION (SOME MODELS)

The display readout may be converted between 12 and 24 hour clock or °C and °F using screws 2A and 2B as indicated in Fig. 50.

#### FAN OPERATION SWITCH

SUPER TRADELINE models include a fan operation switch on the back of the thermostat, on the lower left corner (Fig. 50). See Table IV below to determine correct setting of fan operation switch.

#### CAUTION

The fan operation switch in the SUPER TRADELINE models is factory set to the NON ELEC. position. If the system requires direct thermostat control of the fan in heat mode, the switch must be set to the ELEC. position. See Table IV.

**TABLE IV—SUPER TRADELINE FAN OPERATION SWITCH SETTING.**

FAN OPERATION	FAN OPERATION SWITCH SETTING (4A) FIG. 50	COMMENTS
Fan controlled directly by thermostat in heat mode (typically electric furnaces).	Set to ELEC. position.	Use only 1 system transformer; jumper R and RC.
Fan has independent control in heat mode (typically gas, oil and some electric furnaces).	Set to NON ELEC. position	System may have 1 or 2 transformers; if 1 transformer, jumper R and RC.

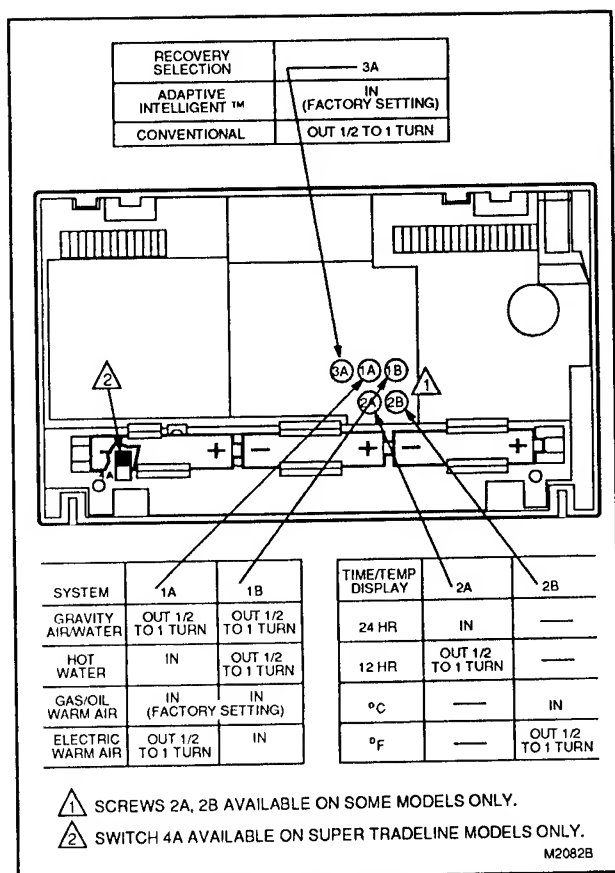


FIG. 50—CYCLE RATE ADJUSTMENT.

### INSTALLING BATTERIES

On the T8600, T8601 and T8603 thermostats, three AAA alkaline batteries are provided as backup to prevent program loss in case of power outage. Batteries are included with thermostat. Install batteries in back of thermostat as shown in Fig. 51. Without battery backup, the program will remain about 30 seconds in event of power loss.

#### IMPORTANT

- When batteries are first installed in the T8600, T8601 and T8603, the display will flash -AC until the thermostat is powered from the system wiring.
- If AC power is lost during operation, the display will show -AC instead of temperature.

On the T8602 Thermostat, power is supplied for the thermostat by three AA alkaline batteries. Batteries are included with thermostat. Install batteries in back of thermostat as shown in Fig. 51. The display will flash 1:00 PM and room temperature.

When the batteries are low, the thermostat display will flash REPL BAT. If device has system switch, set to OFF. Remove the thermostat from the wallplate and install three new alkaline batteries. Install new batteries within approximately 30 seconds from time the batteries are removed to prevent program loss and necessity to reprogram.

#### IMPORTANT

On the T8602, the low battery warning will be displayed about two months before batteries are dead. When the batteries are dead, the system will shut down. After batteries are replaced, thermostat will require reprogramming.

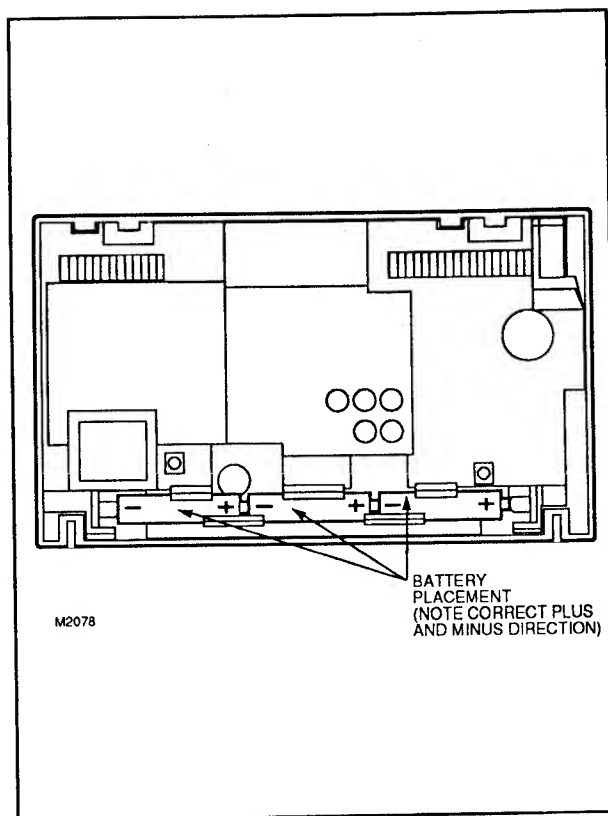


FIG. 51—BATTERY PLACEMENT.

### Power Outages (T8600, T8601, T8603 ONLY)

Backup batteries will hold the programming and keep the display on during most power outages. Once the power is restored, the system will resume normal operation.

If the display goes off when power is lost, either the backup batteries need to be replaced, or are not installed. When power is restored, the display will flash 1:00 PM to remind you to reprogram; will control at preprogrammed temperature until then.

### MOUNTING THE THERMOSTAT

Hang the thermostat on the tabs at the top of the base (Fig. 52a). Swing down and press on lower edge until thermostat snaps in place (Fig. 52b). Open cover, and tighten the captive mounting screws (Fig. 52c).

When 24 V system power is present on T8600, T8601, T8603, the room temperature will be displayed.

### SETTING DAY AND TIME

Set present day and time, as follows:

Press .

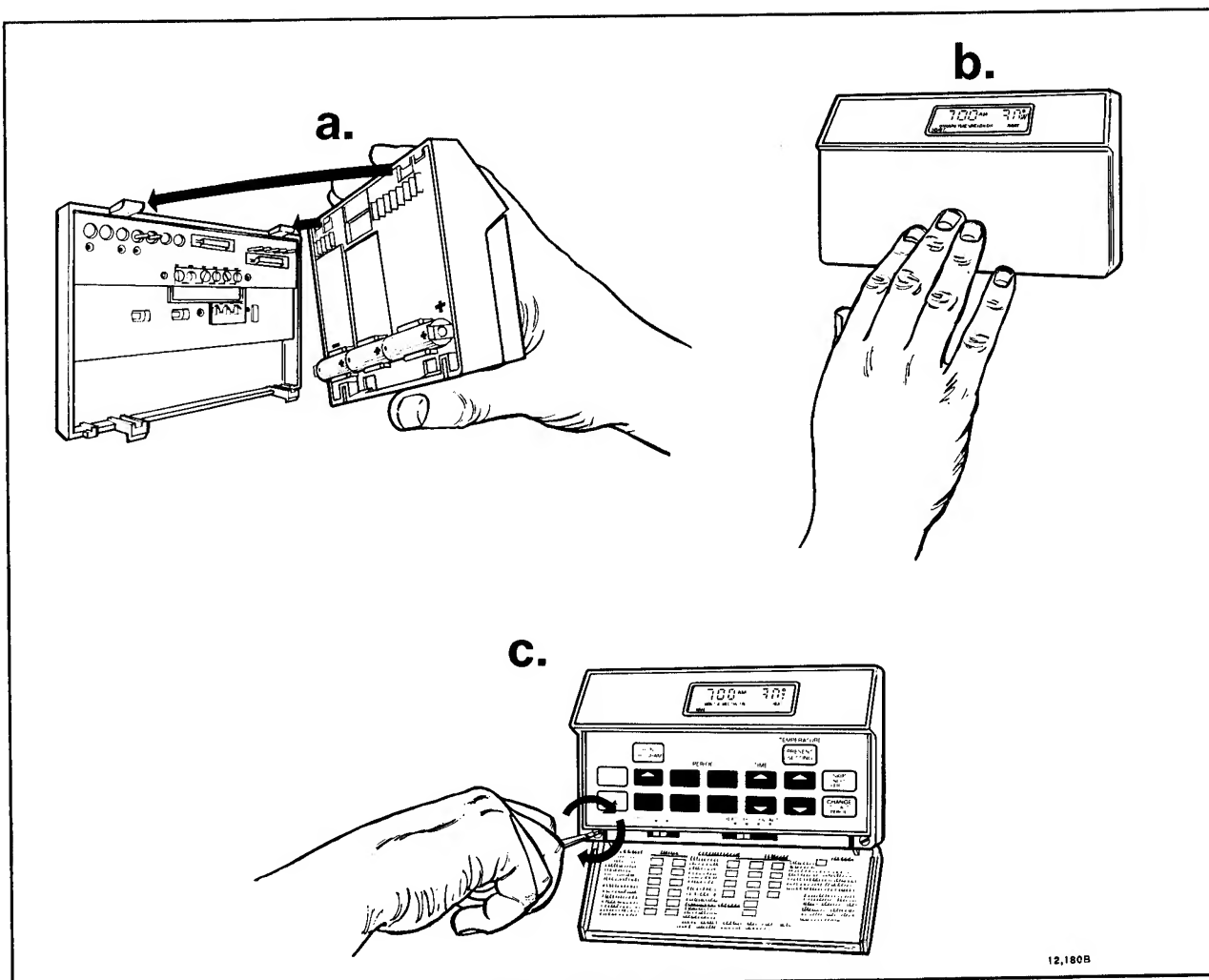
Press TIME or to set the current time.

Press .

Press to set the current day. Each press of the

key advances the display one day.

NOTE: On the T8600, T8601, T8603, when 24 V is first applied to power unit, display will flash 1:00 PM and 32° for a minute or less, followed by 1:00 and the room temperature flashing.



**FIG. 52—MOUNTING THERMOSTAT ON WALLPLATE.**

On the T8602, when thermostat is first turned on, the display will read 1:00 PM and room temperature. It will go off for only a few seconds, then begin to flash on and off.

If the display will not come on,

- check mounting of thermostat to wallplate. If loose or misaligned, remove thermostat and reinstall on the wallplate, making sure it is firmly attached.

- check to see that heat or cool system power is on (T8600, T8601, T8603).
- check voltage between R and W or RC(R) and Y on the T8600, between R and C on the T8601, between C and B/C on the T8603; should be 24 to 30 Vac. Display will show -AC if no 24-30 Vac.
- check for fresh and correctly installed batteries in the T8602.

## CHECKOUT

**NOTE:** On models without system or fan switch, disregard instruction regarding moving of switch.

### HEATING

Move the system switch to HEAT or AUTO and the fan switch to AUTO. Press WARMER key until the setting is about 10° F [6° C] above room temperature. Heating should start, and the fan should run (may be a short delay on forced air systems). Press COOLER key until the setting is about 10° F [6° C] below room temperature. The heating equipment should shut off, followed by the fan.

**NOTE:** On an AUTO changeover thermostat (T8600D, T8601D, T8602D), the cooling temperature must be set at least 3° F [2° C] above the heating temperature, or display will flash.

### COOLING

#### CAUTION

Do not operate cooling if outdoor temperature is below 50° F [10° C]. Refer to manufacturer's recommendations.

**NOTE:** When cooling setting is changed, thermostat will wait up to 5 minutes before turning on the air conditioner. This delay protects the compressor.

Move the system switch to COOL and the fan switch to AUTO. Press COOLER key until the setting is about 10° F [6° C] below room temperature. The cooling equipment and fan should start. Press WARMER key until the setting



is about 10° F [6° C] above room temperature. The cooling equipment and fan should stop.

NOTE: On an AUTO changeover thermostat (T8600D, T8601D, T8602D), the heating temperature must be set at least 3° F [2° C] below the cooling temperature, or display will flash.

#### FAN

Move the system switch to OFF, and the fan switch to ON. The fan should run continuously. When the fan switch is in the AUTO position, fan cycles with the heating or cooling system.

#### INSTALLER SELF-TEST (optional)

##### IMPORTANT

Five minute time delay on cooling does not function during self-test.

Perform the following test as a check of all thermostat functions. *If thermostat does not respond as indicated, thermostat must be replaced.*

1. Press AHEAD and BACK keys at the same time. While holding keys down, all segments of the display should be on Fig. 53).

2. Set system switch to OFF, where applicable. Press AHEAD and BACK and PRESENT SETTING keys at the same time to enter self-test.

3. Press each key as listed below, and look for responses listed, as key is held down and released.

PRESS THIS KEY:	LOOK FOR THIS RESPONSE:	
	KEY DOWN	KEY RELEASED
PRESENT SETTING	15	see note a following
SKIP NEXT PERIOD	07	blank
CHANGE TO LAST PERIOD	03	blank
COOLER	02	blank
WARMER	06	blank
BACK	04	blank
AHEAD	05	blank
RETURN	00	blank
LEAVE	01	blank
SLEEP	08	blank
WAKE	12	see note b following
SET HEAT/COOL	09	blank
DAY	13	micro-processor mask number and revision number
HOLD	10	blank
SET PRESENT DAY/TIME	14	see note c following
RUN PROGRAM	11	normal operating display

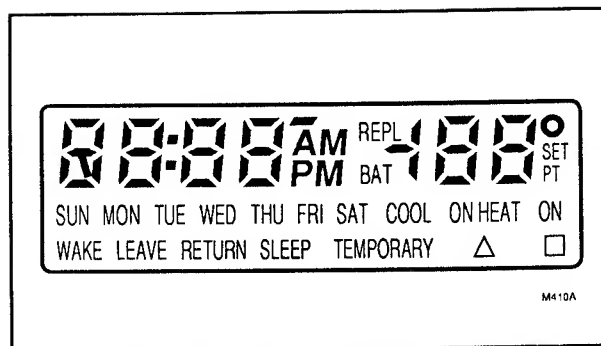


FIG. 53—ALL SEGMENTS ON DISPLAY.

<sup>a</sup>If the system switch is in COOL or AUTO, the cooling system and system LED come on when the key is released. Press and release to turn cooling system and LED off.

#### CAUTION

Do not operate cooling if outdoor temperature is below 50° F [10° C]. Refer to manufacturer's recommendations.

<sup>b</sup>A four-digit code number will appear when the key is released. The four digits of the code represent the following options.

FIRST DIGIT	HEATING CYCLES PER HOUR AT 50% ON TIME SET FOR
0	Gravity Air/Water
2	Hot Water
4	Electric Warm Air
6	Gas/Oil Warm Air

SECOND DIGIT	CLOCK (HR.)	DEGREES	RECOVERY TYPE
0	12	F	Conventional
1	12	C	Conventional
2	12	F	Adaptive Intelligent™
3	12	C	Adaptive Intelligent™
4	24	F	Conventional
5	24	C	Conventional
6	24	F	Adaptive Intelligent™
7	24	C	Adaptive Intelligent™

THIRD DIGIT	THERMOSTAT TYPE	SYSTEM SWITCH POSITION
0	Heat/Cool	Off or Auto
1	Heat Only	Off
2	Heat/Cool	Cool
4	Heat/Cool	Heat
5	Heat Only	Heat or No Switch

FOURTH DIGIT	THERMOSTAT	AUTO OR MANUAL CHANGEOVER	SYSTEM SWITCH
0	T8602	Manual or Heat Only	All Positions
1	T8602	Auto	Heat, Off, Cool
3	T8602	Auto	Auto
4	T8600, T8601, T8603	Manual or Heat Only	All Positions
5	T8600, T8601, T8603	Auto	Heat, Off, Cool
7	T8600, T8601, T8603	Auto	Auto

<sup>c</sup>If the system switch is in HEAT or AUTO, the heating system and system LED come on when the key is released. Press and release again to turn heating system and LED off.

## ABOUT ADAPTIVE INTELLIGENT RECOVERY™

- *People perceive temperature* from a variety of sources, not only from the air in the room, but also from their surroundings—walls, windows and furnishings.
- *Human beings feel differences* in temperature as slight as two degrees Fahrenheit.
- *Common household thermometers and standard thermostats* sense only air temperature, which may or may

not reflect how hot or cold the room actually *feels* to a human being.

- *This thermostat* reads the temperature of the wall as well as the air—and responds to temperature changes as little as one degree Fahrenheit—so room temperature is more likely to “feel right”.

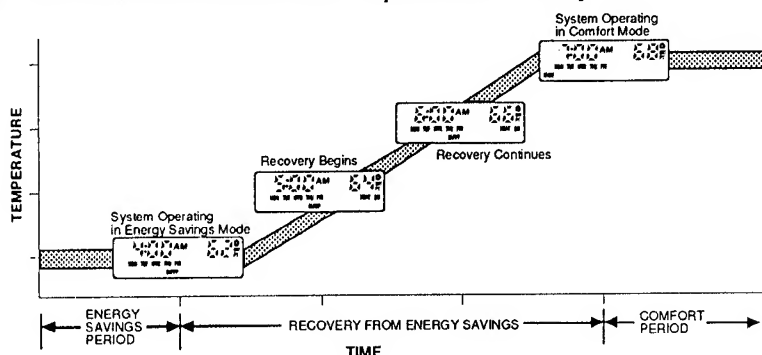
### THE OPTIMUM COMFORT AND ENERGY SAVINGS SOLUTION

- *This thermostat is actually a small but powerful computer.* When calculating the exact time to turn on your furnace or air conditioner, it considers (1) air temperature, (2) the temperature of the wall and (3) when you want the comfort temperature established.
- *During Adaptive Intelligent Recovery™* the thermostat increases the control temperature gradually and turns the equipment on and off several times to save energy by avoiding “overshooting” the comfort temperature. See the current control temperature anytime during recovery by pressing the PRESENT SETTING key. On some models, both the SYSTEM and ENERGY SAVING lights may be lit at the same time during recovery.
- *This “smart” control learns from experience.* Each day

it checks how closely it “hit the target” and adjusts the recovery start time accordingly.

It typically takes four to eight days after installation for this thermostat to adjust to the weather, life style, home construction and heating/cooling system. The thermostat calculates the LEAVE/RETURN recovery separately from the SLEEP/WAKE recovery.

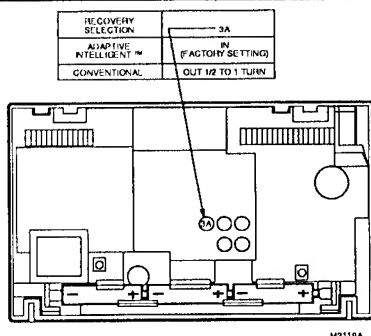
- *With this thermostat, choose Adaptive Intelligent Recovery™ or conventional recovery.* Use Adaptive Intelligent Recovery™ to choose the exact time that the room reaches *comfort* temperature. Use conventional recovery to choose the exact time furnace or air conditioner *comes on* to start recovery.



THE THERMOSTAT USES THE SAME SCHEME TO RETURN GRADUALLY TO LOWER COMFORT TEMPERATURE DURING THE COOLING SEASON.

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## RECOVERY SETTING PROCEDURE



This thermostat includes a screw on the back marked “3A”, allowing for the Adaptive Intelligent Recovery™/conventional recovery choice.

This thermostat was shipped from the factory with the screw positioned for Adaptive Intelligent Recovery™. The installer may have left the screw in this position, or may have changed it to conventional recovery. Before programming, it is important to know for which recovery method the thermostat has been set.

- With Adaptive Intelligent Recovery™, the dwelling will reach the comfort temperature at the exact time pro-

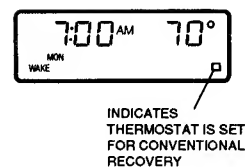
grammed into the thermostat. See page 24 for detailed explanation of Adaptive Intelligent Recovery™.





- With conventional recovery, the programmed time will mark the start of recovery; therefore, program the start time to be earlier than the desired comfort time. It may require some trial and error to arrive at the best starting time, and the best starting time will vary as the seasons change.

To determine which type of recovery is set into the thermostat, make sure thermostat is powered with fresh batteries, or is mounted and powered on the wall (see page 22).

Press  key.

Check thermostat display.



- If the  shows in the lower right-hand corner (see illustration), the thermostat is set for conventional recovery. For Adaptive Intelligent Recovery™, remove thermostat from wallplate, turn screw 3A (on back of thermostat) clockwise  until it bottoms. DO NOT OVERTIGHTEN.
- If the  does not show, the thermostat is set for Adaptive Intelligent Recovery™. For conventional recovery, remove thermostat from wallplate, turn screw 3A (on back of thermostat) out  1/2 to 1 turn.

## PROGRAMMING THE THERMOSTAT

### STEP 1 SET THE CURRENT DAY AND TIME

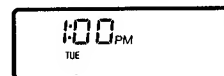
You can program this thermostat either on the wall or in hand.



Press and release. The display shows 1:00 PM Mon.



Press and hold until the current day appears in the display.

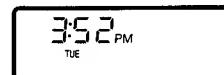


Always press the keys with your fingertip or similar blunt tool. Sharp instruments like a pen or pencil point can damage the keyboard.

NOTE: Check the glossary, page 33, for definitions of unfamiliar words.



Press and hold until the current time appears in the display. Be sure AM or PM appears as desired.



The current day and time are now programmed. Go on to Step 2.

### IMPORTANT

Before beginning STEP 2, determine if thermostat is set for Adaptive Intelligent Recovery™ or conventional recovery. See pages 24-25.

If set for Adaptive Intelligent Recovery™, program the times for when home should be comfortable. The thermostat will decide how early to begin the temperature changes.

If set for conventional recovery, program the times earlier, allowing home to reach the comfort temperature by the time owner is home or wakes up. Some trial and error may be required to arrive at the best starting times.

### STEP 2 SET THE PROGRAM SCHEDULE AND HEATING TEMPERATURES

Start by programming the WAKE time and temperature for weekdays.

The thermostat requires a program for WAKE. Program LEAVE, RETURN and SLEEP or not, as desired.



Press and release. Note that the display shows WAKE and the preprogrammed time and temperature.



If system has air conditioning and the display reads COOL, press and release to switch to HEAT.



NOTE: The display shows Adaptive Intelligent Recovery™ setting in the following instructions.



If display reads SAT or SUN, press and hold until MON TUE WED THU FRI appears.



Press and hold until the display shows the desired starting time.



Press and hold until the display shows the desired temperature.

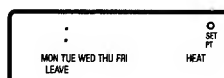


If the display starts to blink while holding down TEMPERATURE WARMER or COOLER, the setting limit has been reached. If thermostat can switch automatically between heating and cooling, the heating temperature must be at least 3 degrees below the air conditioning temperature. For example, if the cooling setting is 75° F, the maximum heating setting is 72° F.

Program the LEAVE time and temperature, if desired.



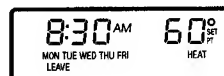
Press and release. The display shows LEAVE, but no time or temperature.



NOTE: If desired, cancel the LEAVE, RETURN or SLEEP program by holding down the period key until the time and temperature disappear from the display.



Press and hold until the display shows the desired starting time.



Press and hold until the display shows the desired temperature.



Program the RETURN time and temperature, if desired.



Press and release. The display shows RETURN, but no time or temperature.



Press and hold until the display shows the desired starting time.



Press and hold until the display shows the desired temperature.



Program the SLEEP time and temperature, if desired.



Press and release. The display shows SLEEP and the preprogrammed time and temperature.



Press and hold until the display shows the desired starting time.



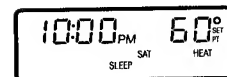
Set the SATURDAY schedule. Use the same procedure as for weekdays.



Press and hold until the display shows the desired temperature.



Press and hold until SAT appears on the display.



Press WAKE, LEAVE, RETURN or SLEEP to select the time period.



Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the temperature.



Set the SUNDAY schedule. Use the same procedure as for weekdays.



Press and hold until SUN appears on the display.



Press WAKE, LEAVE, RETURN, or SLEEP to select the time period.

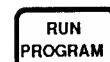


Use the AHEAD/BACK keys to set the time and the WARMER/COOLER keys to set the temperature.

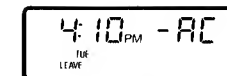


The setting of the program schedule and heating temperatures has been completed. If system has air conditioning, go to Step 3.

NOTE: Some models will show -AC, indicating the thermostat is operating on backup batteries until the thermostat is mounted on the wallplate and the system is powered.



If system does not have air conditioning, press and release to start the program. Go to Step 4.



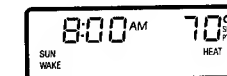
### STEP 3 SET THE COOLING TEMPERATURES, IF SYSTEM HAS AIR CONDITIONING

The program times are the same for both heating and cooling. Only the cooling temperatures need to be programmed if thermostat has already been programmed for heating. To set times as you program the cooling temperatures, use the TIME AHEAD and BACK keys as described in Step 2.

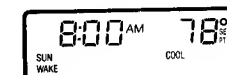
First program the WAKE temperature for weekdays.



Press and release. The display shows WAKE and the time and temperature programmed for heating.



Press and release so COOL shows on the display, along with the preprogrammed cooling temperature.

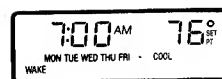


If display reads SAT or SUN, press and hold until MON TUE WED THU FRI appears.





Press and hold until the display shows the desired temperature.



If the display blinks while holding down **TEMPERATURE WARMER** or **COOLER**, the setting limit has been reached. If thermostat can switch automatically between heating and cooling, the cooling temperature must be at least 3 degrees higher than the corresponding heating temperature. For example, if the heating setting is 70° F, the minimum cooling setting is 73° F.

If a lower cooling setting is desired, the heating setting must first be lowered accordingly.

Program the **LEAVE** temperature, if desired.



Press and release. The display shows **LEAVE**, the time programmed for heating, and 78° F.



Press and hold until the display shows the desired temperature.



Program the **RETURN** temperature, if desired.



Press and release. The display shows **RETURN**, the time programmed for heating, and 78° F.



Press and hold until the display shows the desired temperature.



Program the **SLEEP** temperature, if desired.



Press and release.



Press and hold until the display shows the desired temperature.



Set the cooling temperatures for the **SATURDAY** schedule. Use the same procedure as for weekdays.



Press and hold until **SAT** appears on the display.



Press **WAKE**, **LEAVE**, **RETURN** or **SLEEP** to select the time period.

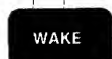
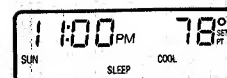


Use the **WARMER/COOLER** keys to set the temperature.

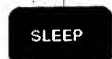
Set the cooling temperatures for the SUNDAY schedule. Use the same procedure as for weekdays.



Press and hold until SUN appears on the display.



Press WAKE, LEAVE, RETURN or SLEEP to select the time period.

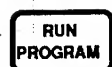


Use the WARMER/COOLER keys to set the temperature.

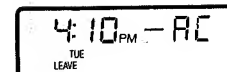


The programming of the cooling temperatures has been completed.

NOTE: Some models will show -AC, indicating the thermostat is operating on backup batteries until the thermostat is mounted on the wallplate and the system is powered.



Press and release to start the program.  
Go to Step 4.

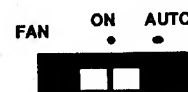


#### STEP 4 SET THE SYSTEM AND FAN SWITCHES, IF THERMOSTAT HAS THEM.

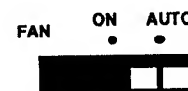
Depending on thermostat model, some or all of the switch positions shown may be available. Note the positions provided on thermostat, then set the switch(es) as desired.

First set the fan switch.

**FAN ON:** The fan runs continuously. Use for improved air circulation during special occasions or for more efficient electronic air cleaning.

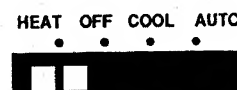


**FAN AUTO:** Normal setting for most homes. The fan goes on and off with the air conditioner in summer. In winter, the fan on most systems starts a few minutes after the furnace comes on. It stops a few minutes after the furnace goes off. The fan starts and stops with the furnace in some electric heat systems.

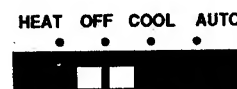


Then set the system switch.

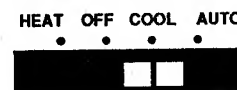
**HEAT:** The thermostat controls your heating system.



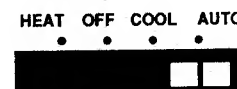
**OFF:** Both the heating and cooling systems are off.



**COOL:** The thermostat controls your air conditioning system.



**AUTO:** The thermostat controls either heating or air conditioning system, depending on room temperature.



The programming of the thermostat is finished.

Read on to learn about the operating flexibility that makes this thermostat THE SMART CHOICE.

If thermostat was removed from the wall to program, replace it following the procedure on page 22.



# OPERATING THE THERMOSTAT

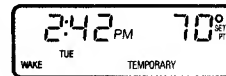
## TEMPORARILY CHANGING THE PROGRAM

These features allow the program to be custom-tailored for those times when someone comes home early, or stays up late, or plans to be out for the evening.

To keep the current temperature through the next program period:



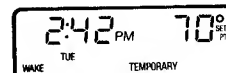
Press and release. The name of the period to be skipped will flash in the display until the next regularly scheduled period starts.



To go back to the temperature of the previous program period:



Press and release. The display will show the name of the previous period and flash "temporary" until the next regularly scheduled period starts.



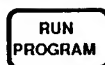
To temporarily raise or lower the temperature for the current period only:



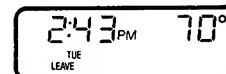
Press and hold until the desired temperature is reached. The display will flash "temporary" until the next programmed time period starts.



To change back:



Press and release to cancel any of the temporary settings.



## PERMANENTLY CHANGING THE PROGRAM

If schedule changes or a different temperature is desired, it is possible to update any setting without affecting the rest of the program.



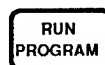
Press and release the desired period key.



Press and hold until the desired schedule day shows on the display.



Press and hold the Time or Temperature keys until the display shows the desired new program.



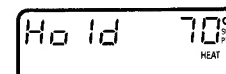
Press and release to return to normal operation.

## OPERATING THE THERMOSTAT MANUALLY

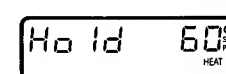
This feature is particularly useful when going on vacation or other extended absence. It does not cancel the program.



Press and release.



Press and hold to change the temperature setting. After a few seconds the display will show the current temperature.

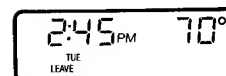




Press and release to check the temperature setting.



Press and release to cancel manual control.



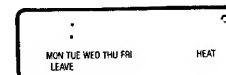
NOTE: Moving the system switch also cancels hold.

### CANCELING PROGRAM SETTINGS

The thermostat requires time and temperature settings in the WAKE period, but any of the others can be canceled. Weekday, Saturday and Sunday settings are canceled separately.



Press and hold the desired period key until the time and temperature clear from the display (about 3 seconds).



Press and release to return to normal operation.



### CHECKING THE PROGRAM TIMES AND TEMPERATURES

It is possible to check all the stored settings without affecting the permanent program.



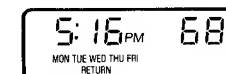
Press and release the desired period key. The start time and temperature setting will appear on the display.



Press and release to display the next daily time and temperature for that period.



Press and release to return to normal operation.



### CHECKING THE CURRENT TEMPERATURE SETTING

Press a single key to compare current room temperature to the settings at any time.



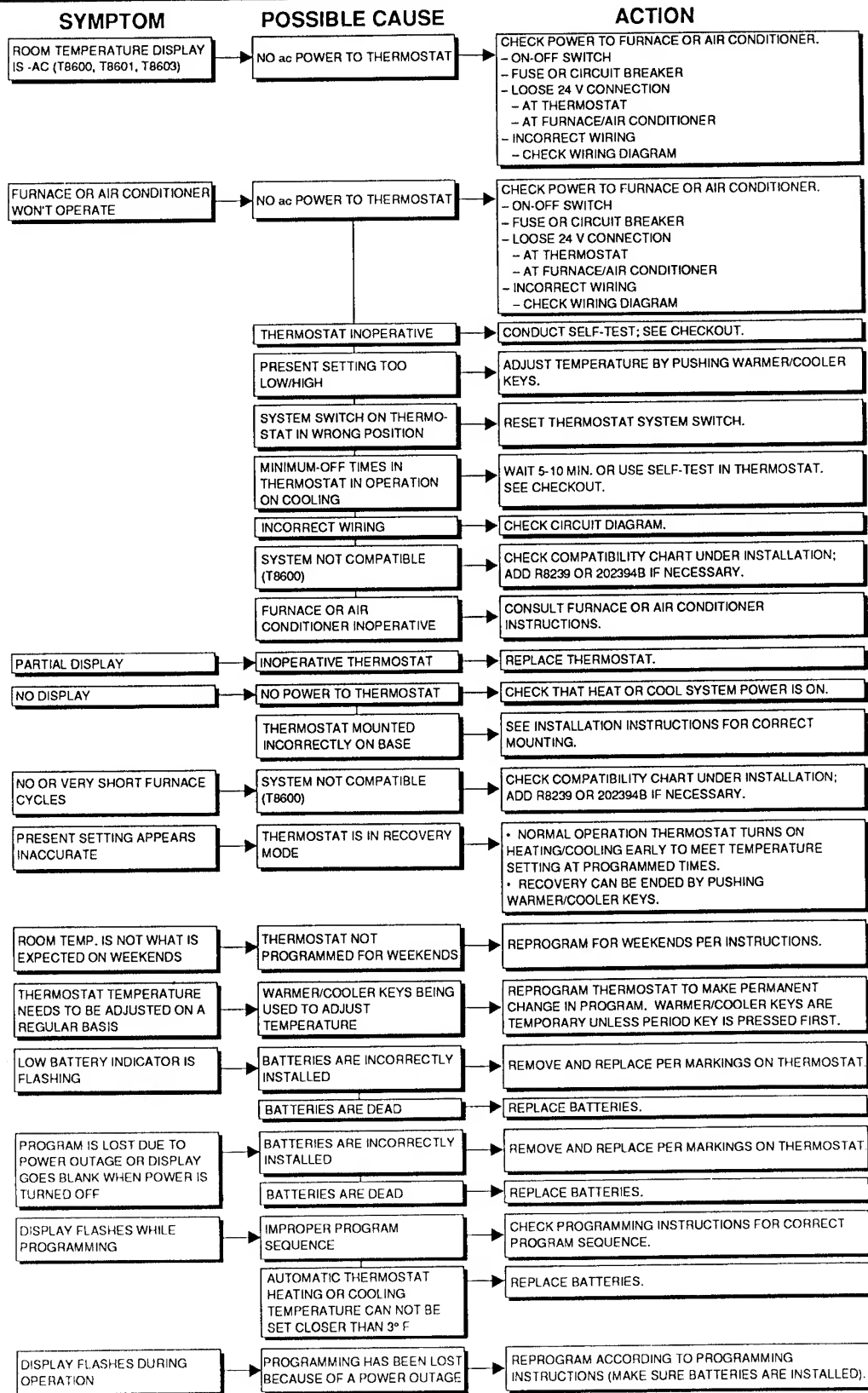
Press and release. The display will show the current temperature setting for several seconds, then revert to the room temperature.



Applicable if thermostat is set for Adaptive Intelligent Recovery™: During recovery from energy savings, the setting displayed will not match the programmed setting. This is because the thermostat gradually changes the temperature setting during recovery to provide most efficient use of the heating or cooling equipment.

# TROUBLESHOOTING

Start the system by setting the thermostat and observing system response. If problem occurs, establish symptom and use the following troubleshooting chart to check for possible cause and action.



M1383

# GLOSSARY

## Adaptive Intelligent Recovery™

Recovery automatically starts early enough so house is at the comfort setting by the time chosen.

## Comfort temperature

The temperature wanted in the morning and evening when people are home.

## Conventional Recovery

Recovery starts at the time programmed into the thermostat; house reaches comfort temperature shortly thereafter.

## Energy-saving temperature

The lower (heating) or higher (cooling) temperature that allows savings on heating and cooling costs when asleep or away. Also called the setback (heating) or setup (cooling) temperature.

## Period key

One of the four keys—WAKE, LEAVE, RETURN, or SLEEP—to check or program the start time and temperature for a time period.

## Preprogrammed schedule

This is the schedule programmed into your thermostat at the factory. It sets a night program that provides energy savings if homeowner doesn't set program, or if personal program is lost for any reason. The program, which is the same for all days of the week, is:

Period	Start Time	Temperature	
		Heating	Cooling
WAKE	6:00 AM	70° F	78° F
LEAVE	-----	No program	-----
RETURN	-----	No program	-----
SLEEP	10:00 PM	60° F	78° F

## Program

The times and temperatures set to define the comfort and energy savings periods for each schedule (weekdays, Saturday, Sunday).

## Recovery

The time when the thermostat operates the heating or air conditioning equipment to return the house from the energy savings to the comfort temperature. If thermostat is set for Adaptive Intelligent Recovery™, the thermostat starts the recovery period early so the house will be at the comfort setting by the time chosen.

## Saturday program schedule

The schedule of WAKE, LEAVE, RETURN and SLEEP period start times and temperatures that homeowner programs to run on Saturdays.

## Setback

Reducing the temperature in the house for a set period every day in winter for energy savings. The lower temperature is the energy savings temperature.

## Set point

The temperature set on the thermostat. The thermostat turns the heating or cooling equipment on and off to maintain this temperature at the thermostat location until another temperature setting goes into effect.

## Setup

Raising the temperature in the house for a set period every day in summer for energy savings. The higher temperature is the energy saving temperature.

**Status lights**—Lights on some models that show system operating mode.

**ENRG SAV light**—This light glows during the LEAVE and SLEEP periods.

**SYSTEM light**—This light glows whenever the thermostat is calling for heating or air conditioning.

## Sunday program schedule

The schedule of WAKE, LEAVE, RETURN and SLEEP period start times and temperatures that homeowner programs to run on Sundays.

## Time period

One of four program periods; WAKE, LEAVE, RETURN and SLEEP available with the thermostat. One period begins when the previous period ends.

**WAKE**—For conventional recovery, the time the recovery to the comfortable temperature begins; for Adaptive Intelligent Recovery™, the time period when homeowner wants the house at a comfortable temperature while the family gets up and gets ready to leave for work or school. This is the only period that must contain a time and temperature.

**LEAVE**—The time period when you can set back (winter) or up (summer) the temperature for energy savings because the family is usually away from home.

**RETURN**—For conventional recovery, the time the recovery to the comfortable temperature begins; for Adaptive Intelligent Recovery™, the time period when homeowner wants the house at a comfortable temperature for family activities in the evening before bedtime.

**SLEEP**—The time period when homeowner can set back (winter) or up (summer) the temperature for energy savings because the family is sleeping. Set it to start at your family's normal bedtime.

Often the SLEEP program is set only for the heating season so family members can sleep cool in summer.

## Weekday program schedule

The schedule of WAKE, LEAVE, RETURN and SLEEP period start times and temperatures that homeowner programs to run Monday through Friday.

# TYPICAL HOMEOWNER QUESTIONS

## 1. Why do some models of this thermostat have lights?

Battery-operated thermostats do not have indicator lights to conserve battery power. Others may have one or two indicator lights, depending upon the exact model and application.

## 2. The temperature displayed on the thermostat doesn't always match the room temperature on another thermostat located right next to it. Why?

The thermostat is a *very* accurate instrument designed to sense both air temperature and wall temperature, much as your body does. It gives an *average* reading over a period of time.

## 3. Can I control when the furnace comes on in the morning?

When the thermostat is set for Adaptive Intelligent Recovery™, it will turn on the furnace as early as necessary to reach your desired comfort temperature at the programmed time. The earliest it will be is 24 minutes per degree setback ahead of your WAKE time, but it will vary depending on your system, the weather and how much the temperature dropped in the house at night.

If you want to control the start time yourself, just switch the thermostat to conventional recovery following the directions on page 25. This way, the furnace won't come on until your programmed WAKE time, but of course it will take a little while for your house to heat up to the comfort temperature.

Remember, whichever way you set your thermostat, if it is so cold outside that your house drops to your sleep temperature, the furnace will turn on and off at night to control the temperature at that setting.

## 4. What does the HOLD key do?

It bypasses *all* program settings and *holds* the temperature at the present setting. To increase or decrease the temperature while on HOLD, use the WARMER-COOLER keys. Touching RUN PROGRAM will return the device to programmed operations.

## 5. How long does the HOLD key hold?

Forever! The HOLD key will hold the temperature indefinitely. The only way to release it is to push the RUN PROGRAM key or change the system switch positions if applicable. For a *temporary* temperature change, simply press WARMER or COOLER key. This tempo-

rary setting will last until the next scheduled program begins.

## 6. How can this thermostat save energy when it comes on and off so many times early in the morning hours?

Two ways. First, it *saves* energy (and money) by setting back the temperature for blocks of time during the day or night. Second, it *conserves* energy by *recovering gradually* to the desired temperature. This prevents *overshooting* your comfort set point (and wasting energy) or *undershooting* the comfort set point (and forcing you to change the thermostat setting, also wasting energy).

## 7. My thermostat has ENRG SAV and SYSTEM lights. Why do they both go on at the same time? (For example: during the sleep period.)

During Adaptive Intelligent Recovery™, when you recover *gradually* to a next set point, you will stay in the energy-saving mode until the next programmed time is reached. But the system will operate intermittently to *gradually* raise the temperature to your desired comfort level before the time you've set as your WAKE time. You will always be saving energy until the next period's *actual* set point is reached.

## 8. Why don't all thermostat models have AUTO (automatic) changeover from heating to cooling?

Most parts of the country don't have wide temperature swings during a 24-hour period, so it is not necessary. Desert climates, such as Phoenix, are the exception, because of wide variations in temperature which may require both the air conditioner and furnace to run during different times within a given 24-hour period.

## 9. Sometimes my Chronotherm III thermostat doesn't allow the house temperature to drop to my SLEEP setting before it starts bringing the furnace on. Why?

When you start your SLEEP period, the thermostat will turn off your furnace, and your house temperature will start to fall. After that, the thermostat is out of the picture until the house temperature falls all the way to your SLEEP temperature setting or until recovery starts.

In mild weather or with good insulation, your house temperature may not fall all the way to your SLEEP temperature setting and the thermostat won't turn on your furnace until the time to recover back up to your comfort setting.

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This equipment is a Class B digital apparatus which complies with Canadian Radio Interference Regulations, CRC c.1374.

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**Honeywell Inc.**  
1885 Douglas Drive N.  
Golden Valley, MN 55422-4386

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